Biblio patents

5/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015196459 **Image available**
WPI Acc No: 2003-256995/200325
XRPX Acc No: N03-203831

Electrical stimulation therapy system senses patient cardiac cycle electrical, mechanical, chemical or physiological aspects and adjusts stimulation timing and amplitude

Patent Assignee: MEDTRONIC INC (MEDT)
Inventor: BENNETT T D; DENO C D; EULER D E; HAVEL W J; STEIN P M

Number of Countries: 027 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200320364	A2	20030313	WO 2002US27924	A	20020828	200325	B

Priority Applications (No Type Date): US 2001315316 P 20010828
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200320364	A2	E	115	A61N-001/00	

Designated States (National): AU CA IL JP
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR

Abstract (Basic): WO 200320364 A2

NOVELTY - System uses rule-based means to initiate and terminate electrical stimulation therapies to improve cardiac function, senses cardiac cycle aspects, closed-loop feedback control, means for detecting cardiac cycle refractory and non-refractory periods, a safety lockout and means for providing atrial coordinated pacing and defibrillation stimulation therapies. An electrical atrial pace stimulus is initiated from a defibrillator, pacemaker etc. if the actual or estimated intrinsic atrial rate decreases at a rate that indicates that it will probably decrease below a lower threshold value.

DETAILED DESCRIPTION - There are INDEPENDENT CLAIMS for:

(1) A physiologic atrial coordinated pacing method of therapy delivery for a patient having intact AV conduction

(2) A method of therapy delivery involving stimulation of a portion of the sympathetic nervous system for enhanced cardiac function without stimulating the cardiac tissue sufficiently to evoke depolarisation of the cardiac tissue.

(3) A method of safely applying PESP stimulation pulse therapy to a heart chamber

(4) A method of indicating initiation and termination of PESP stimulation therapy

USE - System is for monitoring signs of acute or chronic mechanical dysfunction such as heart failure, cardiogenic shock, pulseless electrical activity or electromechanical dissociation, and providing the appropriate therapies.

ADVANTAGE - System avoids the need for inotropic drugs, **intra - aortic** balloon **pumps** etc., can teat dysfunction as a result of drug overdose or **hypothermia** , can combine with negative inotrope drug treatments to improve patient tolerance of them and provides for continuous or scheduled therapy.

DESCRIPTION OF DRAWING(S) - The figure shows a set of traces representing physiological and therapy activity.

pp; 115 DwgNo 21/36

Title Terms: ELECTRIC; STIMULATING; THERAPEUTIC; SYSTEM; SENSE; PATIENT; CARDIAC; CYCLE; ELECTRIC; MECHANICAL; CHEMICAL; PHYSIOLOGICAL; ASPECT; ADJUST; STIMULATING; TIME; AMPLITUDE

Derwent Class: P34; S05
International Patent Class (Main): A61N-001/00
File Segment: EPI; EngPI

5/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015088021 **Image available**
WPI Acc No: 2003-148539/200314
XRAM Acc No: C03-038411

New isoindole and isoquinoline derivatives are factor Xa inhibitors used for treating e.g. myocardial infarction, stroke and angina

Patent Assignee: MILLENNIUM PHARM INC (MILL-N)
Inventor: HUANG W; SCARBOROUGH R M; ZHANG P; ZHU B
Number of Countries: 100 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200296873	A1	20021205	WO 2002US16784	A	20020529	200314	B

Priority Applications (No Type Date): US 2001294273 P 20010531
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200296873	A1	E	36	C07D-209/48	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 200296873 A1

NOVELTY - Isoindole and isoquinoline derivatives (I) are new.

DETAILED DESCRIPTION - Isoindole and isoquinoline derivatives of formula (I), their isomers, salts, hydrates, solvates and prodrugs are new.

A=e.g. phenyl, naphthyl or 5-10C membered monocyclic or fused bicyclic heterocyclyl containing 1-4 N, O or S heteroatoms (all optionally substituted), 1-6C alkyl or 3-8C cycloalkyl;

Y=e.g. CO, CH2, SO2, SO or O;

D=phenyl or aromatic 5- or 6-membered heterocyclyl (both optionally substituted);

X=e.g. SO, CO, C(R5)(R5a), OC(R5)(R5a)-C(S) or N=C(R5)-CO;

R5, R5a=e.g. H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, NO2 or CF3;

Q=O, or

Q + C=CH2;

E=e.g. a bond, CO or C(R8)(R8a);

R8, R8a=e.g. H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl or 3-8C cycloalkyl;

G=e.g. a bond, O, O-C(R15)(R15a) or N(R15)-CO-N(R15a);

R15, R15a=e.g. H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl or 0-4C alkylphenyl;

J=a bond, O, S, SO or OCH2;

Z=phenyl, naphthyl or 5-10 membered monocyclic or fused bicyclic heterocyclyl;

L=e.g. H, CN, CON(R17)(R17a) or OR17, and

R17, R17a=H, 1-4C alkyl, 0-4C alkylphenyl or COO0-4C alkylnaphthyl.

Full definitions are given in the Definitions (Full Definitions) section.

ACTIVITY - Anticoagulant; Thrombolytic; Cardiant; Antianginal; Cerebroprotective; Vasotropic; Antibacterial; Immunosuppressive; Hemostatic; Tranquilizer; Vulnerary; Nephrotropic.

MECHANISM OF ACTION - Factor Xa inhibitor.

Test details are described, but no results are given in the source material.

USE - Used for treating acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post-coronary angioplasty, a thrombotically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, venous thrombosis, deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, thromboangiitis obliterans, thrombotic disease associate with heparin-induced thrombocytopenia, thrombotic complications associated with extracorporeal circulation, thrombotic complications associated with instrumentation such as cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve and conditions requiring the fitting of prosthetic devices and for inhibiting coagulation of biological samples (all claimed). (I) Are also used as diagnostic reagents and for treating septic shock, trauma, reocclusion or restenosis of reperfused coronary arteries, widespread organ failure, hemorrhagic stroke, renal dialysis, blood oxygenation and cardiac catheterization.

ADVANTAGE - (I) Are highly selective inhibitors of isolated factor Xa and of blood coagulation or when assembled in the prothrombinase complex. (I) Have good bioavailability and solubility and a higher degree of binding to factor Xa than to thrombin.

pp; 36 DwgNo 0/0

Title Terms: NEW; ISOINDOLE; ISOQUINOLINE; DERIVATIVE; FACTOR; INHIBIT; TREAT; MYOCARDIUM; INFARCTION; STROKE; ANGINA

Derwent Class: B02

International Patent Class (Main): C07D-209/48

International Patent Class (Additional): A61K-031/4035; A61P-007/02; C07D-209/46; C07D-403/12

File Segment: CPI

5/5/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

015087766 **Image available**

WPI Acc No: 2003-148284/200314

XRAM Acc No: C03-038244

XRPX Acc No: N03-117173

Formulation useful for sustained release of drug comprises polymer matrix and prodrug e.g. ciprofloxacin-diclofenac and ciprofloxacin-naproxen, dispersed in polymer

Patent Assignee: ASHTON P (ASHT-I); CHEN J (CHEN-I); SMITH T J (SMIT-I); CONTROL DELIVERY SYSTEMS INC (CONT-N)

Inventor: ASHTON P; CHEN J; SMITH T J

Number of Countries: 100 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200287586	A1	20021107	WO 2002US13385	A	20020426	200314 B
US 20030039689	A1	20030227	US 2001286343	P	20010426	200318
			US 2001322428	P	20010917	
			US 2002372761	P	20020415	
			US 2002134033	A	20020426	

Priority Applications (No Type Date): US 2002372761 P 20020415; US 2001286343 P 20010426; US 2001322428 P 20010917; US 2002134033 A 20020426

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200287586	A1	E	75	A61K-031/513	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

US 20030039689	A1			A61K-009/52	Provisional application US 2001286343
					Provisional application US 2001322428
					Provisional application US 2002372761

Abstract (Basic): WO 200287586 A1

NOVELTY - A sustained release formulation (F1) comprises a polymer matrix and a prodrug (I) dispersed in the polymer.

DETAILED DESCRIPTION - A sustained release formulation (F1) comprises a polymer matrix and a prodrug of formula A-X-J (I) dispersed in the polymer.

A=a drug moiety;

X=covalent linker or ionic bond; and

J=a moiety covalently linked or ionically bonded to A to form a prodrug having a lower solubility than the active form of A.

The solubility of the active form of A and prodrug in water is greater than 1 mg/ml and less than 1 mg/ml respectively.

INDEPENDENT CLAIMS are also included for the following:

(1) A medical device (D1) comprises a substrate coated with (F1);

(2) A coated device combination comprises the medical device (D2), which has at least one surface coated with (F1) that permits the release of A during the implantation period;

(3) A stent having at least an insertable or implantable portion coated with (F1);

(4) An intraluminal medical device coated with a sustained release system comprising a biological polymer and low solubility prodrug dispersed in it;

(5) Treatment of an intraluminal tissue involves positioning a stent having an interior surface and an exterior surface coated with low solubility prodrug dissolved or dispersed in a biological polymer, at the tissue site and deploying it; and

(6) Manufacturing (M1) a sustained release system involves preparation of (F1) by mixing the polymer matrix and the prodrug.

The polymer matrix is permeable to A and its non-release rate limiting with respect to a rate of A from the polymer matrix.

USE - As a coating composition for medical device that is used to deliver a medicament; for manufacture of a medication for treating patient with a sustained dosage regimen of active form of A (claimed).

ADVANTAGE - (F1) provides sustained release of A for at least 24 hours and at the same time the concentration of the prodrug in fluid outside the polymer is less than 10% of the concentration of A. A has a log P (logarithm of partition co-efficient) value at least 1 or 2 log P unit less than that of the prodrug. ED50 of the prodrug is at least 10 (preferably 1000) times greater than that of the active A. A is at least 10 times more soluble in water than the prodrug. The polymer holds the prodrug in a particular anatomic position and prevents disintegration of the prodrug. Also the polymer reduces interaction between the prodrug and proteinaceous components in surrounding bathing fluid. The sustained release system gives desired local or systemic

physiological or pharmacological effect.
pp; 75 DwgNo 0/11
Title Terms: FORMULATION; USEFUL; SUSTAINED; RELEASE; DRUG; COMPRISE; POLYMER; MATRIX; PRODRUG; CIPROFLOXACIN; DICLOFENAC; CIPROFLOXACIN; NAPROXEN; DISPERSE; POLYMER
Derwent Class: A96; B05; B07; P34
International Patent Class (Main): A61K-009/52; A61K-031/513
International Patent Class (Additional): A61K-009/22; A61L-031/16; A61P-035/00; A61K-031-58; A61K-031-192; A61K-031/513
File Segment: CPI; EngPI

5/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014326958
WPI Acc No: 2002-147661/200219
XRAM Acc No: C02-045792
Amino substituted bicyclic compound useful for treating atherosclerosis, are obtained by coupling amino substituted 2-chromanyl derivative with benzoyl derivative via an amide bond
Patent Assignee: LILLY & CO ELI (ELIL)
Inventor: ANTOINE L; BORGHESE A; BOUQUEL P; FISHER M; GORISSEN H; JAKUBOWSKI J A; KHAU V V; MARTINELLI M; MERSCHAERT A; PAAL M; RUHTER G; RYPENS C; SCHOTTEN T; STENZEL W; VAN HOECK J
Number of Countries: 095 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200194333	A2	20011213	WO 2001US17765	A	20010601	200219	B
AU 200175115	A	20011217	AU 200175115	A	20010601	200225	
EP 1286982	A2	20030305	EP 2001941787	A	20010601	200319	
			WO 2001US17765	A	20010601		

Priority Applications (No Type Date): US 2000208762 P 20000602
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200194333	A2	E	33	C07D-311/58	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200175115	A		C07D-311/58	Based on patent WO 200194333
EP 1286982	A2	E	C07D-311/58	Based on patent WO 200194333

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

Abstract (Basic): WO 200194333 A2
NOVELTY - Amino substituted 2-chromanyl derivative are coupled with benzoyl derivative via an amide bond.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following: 1) Amino substituted bicyclic compounds of formula (I) or (II) or its salt or solvate; 2) a compound of formula (III) and (IV) or (V); and 3) preparation of (I) or (II) and (III) - (V).
R=H or halo;
R1=H or alkyl;
R=alkyl (preferably ethyl).
(I) or (II) is present in pure, substantially pure or enriched form.

ACTIVITY - Antiarteriosclerotic; cardiant; Antianginal; Vasotropic; cerebroprotective; Anticoagulant; Thrombolytic; Gynecological; Tranquilizer; Vulnerary; and Cytostatic.

MECHANISM OF ACTION - Platelet aggregation inhibitor.

USE - For treating a mammal to alleviate the pathological effect of atherosclerosis and arteriosclerosis, acute myocardial infarction, chronic stable angina, unstable angina, transient ischemic attacks and strokes, peripheral vascular disease, arterial thrombosis, preclampsia, embolism, restenosis following angioplasty, carotid endarterectomy and anastomosis of vascular grafts (claimed); for the treatment of thrombotic syndrome occurring in the venous system including deep venous thrombosis or pulmonary embolus occurring either spontaneously or in the setting of malignancy, surgery or trauma; for the treatment of disseminated intravascular coagulation, thrombotic thrombocytopenia purpura, thromboanginitis obliterans or thrombotic disease associated with heparin induced thrombocytopenia; for the treatment of thrombotic complications associated with extracorporeal circulation e.g. renal dialysis, cardiopulmonary bypass or other oxygenation procedure, plasmapheresis; for the treatment of thrombotic complications associated with instrumentation e.g. cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve.

ADVANTAGE - (I) or (II) can be added to or contacted with any medium containing or suspected to contain factor 11b/11a in which it is desired that blood coagulation be inhibited, e.g. when contacting the mammal's blood with material such as vascular grafts, stents, orthopedic prostheses, cardiac stents valves and prostheses extra corporeal circulation systems.

pp; 33 DwgNo 0/0

Title Terms: AMINO; SUBSTITUTE; COMPOUND; USEFUL; TREAT; ATHEROSCLEROSIS; OBTAIN; COUPLE; AMINO; SUBSTITUTE; CHROMANYL; DERIVATIVE; BENZOYL; DERIVATIVE; AMIDE; BOND

Derwent Class: B02; B05; C02; C03

International Patent Class (Main): C07D-311/58

International Patent Class (Additional): A61K-031/35; A61P-007/02; C07C-257/18

File Segment: CPI

5/5/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014196437 **Image available**

WPI Acc No: 2002-017134/200202

Related WPI Acc No: 1998-387599; 2001-487962

XRAM Acc No: C02-004770

New alpha-sulfonamido and alpha-sulfinamido containing carboxylic acid compounds are integrin antagonists, useful for preventing or treating thrombotic disorders e.g. acute coronary syndrome, myocardial infarction and unstable angina

Patent Assignee: FISHER M J (FISH-I); FRANCISKOVICH J B (FRAN-I); JAKUBOWSKI J A (JAKU-I); MASTERS J J (MAST-I); SCARBOROUGH R M (SCAR-I); SMYTH M (SMYT-I); SU T (SUTT-I); LILLY & CO ELI (ELIL)

Inventor: FISHER M J; FRANCISKOVICH J B; JAKUBOWSKI J A; MASTERS J J; SCARBOROUGH R M; SMYTH M; SU T

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20010034369	A1	20011025	US 9640063	P	19961209	200202	B
			US 96762117	A	19961209		

			WO 97US22495	A	19971208	
			US 99328197	A	19990608	
			US 2001855448	A	20010515	
US 6552079	B2	20030422	US 9640063	P	19961209	200330
			WO 97US22495	A	19971208	
			US 99328197	A	19990608	
			US 2001855448	A	20010515	

Priority Applications (No Type Date): US 9640063 P 19961209; US 96762117 A 19961209; WO 97US22495 A 19971208; US 99328197 A 19990608; US 2001855448 A 20010515

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010034369	A1		24	A61K-038/05	Provisional application US 9640063
					CIP of application US 96762117
					Cont of application WO 97US22495
					Cont of application US 99328197
					Cont of patent US 6245809
US 6552079	B2			C07C-311/04	Provisional application US 9640063
					Cont of application WO 97US22495
					Cont of application US 99328197
					Cont of patent US 6245809

Abstract (Basic): US 20010034369 A1

NOVELTY - alpha-Sulfonamido and alpha-sulfinamido containing carboxylic acid compounds (I) and their stereoisomers, salts, hydrates, solvates and prodrug derivatives, are new.

DETAILED DESCRIPTION - alpha-Sulfonamido and alpha-sulfinamido containing carboxylic acid compounds (I), and their stereoisomers, salts, hydrates, solvates and prodrug derivatives, are new.

Y=COOH or COOR4;

R4=1-10C alkyl, 1-8C alkylaryl or aryl-(1-8C alkyl);

A=0-8C alkyl-NR5-CO-(0-8C alkyl), 0-8C alkyl-CO-NR5-(0-8C alkyl), 0-8C alyl-NR5-CO-(1-8C alkyl)-NR5-CO-(0-8C alkyl), 0-8C alkyl-NR5-D(1-8C alkyl)-NR5-CO-(0-8C alkyl), 0-8C alkyl-CO-NR5-(0-8C alkyl)-CO-NR5-(0-8C alkyl), 0-8C alkyl CO-(1-8C alkyl)-CO-NR5-(0-8C alkyl), 0-8C alkyl-NR5-(0-8C alkyl)-CO-NR5-(0-8C alkyl), 0-8C alkyl-O-(0-8C alkyl)-CO-NR5-(0-8C alkyl), or 0-8C alkyl-O-(2-8C alkyl)-O-(0-8C alkyl)-CO-NR5-(0 8C alkyl);

R5=H or 1-6C alkyl;

Z=-NH-C(NR9R10)=NR11 or -C(NR9R10)=NR;

R9 - R11=H or 1-6C alkyl;

R1, R3=H;

R2=-SOm-aryl or -SOm-(1-10C alkyl); and

m=2.

ACTIVITY - Cardiant; antianginal; thrombolytic; cerebroprotective; vasotropic; anticoagulant; cytostatic.

MECHANISM OF ACTION - Integrin antagonists.

Tests were carried out to determine (a) inhibition of vitronectin alphavbeta3 binding and (b) inhibition of ADP-induced human platelet aggregation. IC50 values for 2-benzenesulfonylamino-3-(8-guanidino-octanoylamino)-propionic acid (Ia) were (a) 0.02 microM and (b) 0.1 microM.

USE - For preventing or treating conditions characterized by undesired thrombosis, e.g. acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post coronary angioplasty, a thrombotically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated

intravascular coagulation, thrombotic thrombocytopenic purpura, thromboangiitis obliterans, thrombotic disease associated with heparin-induced thrombocytopenia, or thrombotic complications associated with extracorporeal circulation or with instrumentation such as cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve, conditions requiring fitting of prosthetic devices, vascularization of solid tumors and retinopathy, (all claimed).

pp; 24 DwgNo 0/0

Title Terms: NEW; ALPHA; SULPHONAMIDO; ALPHA; CONTAIN; CARBOXYLIC; ACID; COMPOUND; ANTAGONIST; USEFUL; PREVENT; TREAT; THROMBUS; DISORDER; ACUTE; CORONARY; SYNDROME; MYOCARDIUM; INFARCTION; UNSTABLE; ANGINA

Derwent Class: B05

International Patent Class (Main): A61K-038/05; C07C-311/04

International Patent Class (Additional): A61K-031/18; A61K-031/198; C07C-317/28

File Segment: CPI

5/5/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

013881867 **Image available**

WPI Acc No: 2001-366079/200138

XRAM Acc No: C01-112187

New peptidyl heterocyclic compounds are selective factor Xa inhibitors useful as anticoagulants for treating thrombotic disorders and inhibiting coagulation in vitro

Patent Assignee: COR THERAPEUTICS INC (CORT-N)

Inventor: MARLOWE C K; SCARBOROUGH R M; ZHU B

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6211154	B1	20010403	US 95480491	A	19950607	200138	B

Priority Applications (No Type Date): US 95480491 A 19950607

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6211154	B1		24	C07K-005/08	

Abstract (Basic): US 6211154 B1

NOVELTY - Peptidyl heterocyclic compounds (I) with an IC50 value of less than 0.5 micro-M for factor Xa are new.

DETAILED DESCRIPTION - Peptidyl heterocyclic compounds (I) of formula (IA) and (IB) and their isomers, salts, hydrates and solvates, with an IC50 value of less than 0.5 micro-M for factor Xa, are new.

m, n=0-4;

Y=NH, S, O, CH2, CHOH, CH2CH2 or CO;

A=piperidinyl, pyrrolidinyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl or 3-6C heteroaryl or absent;

R1-R3=H or 1-3C alkyl;

J, E=O or H2;

D=N, CH, NCH2, NCH2CH2 or CHCH2;

R4, R6=H or Me;

M=N, NH, NMe, O, S, SO, SO2, CH2 or absent;

Q=piperidinyl, pyrrolidinyl, 3-8C cycloalkyl, naphthyl, pyridyl, or phenyl (optionally substituted by 1-3 lower alkoxy, lower alkyl, lower alkylamino, OH, halogen, CN, SH, NO2, alkylthio, CHO, COOH, alkoxycarbonyl or CONH2), or absent;

G=N, CH or H;

R5=H or 1-3C alkyl or is absent if G is H;
U=a group of formula (i)-(iii) or (iv) or (v) (if M is absent;
R7, R8=H, 1-10C alkyl, aryl, aralkyl, halogen, NO2, NR9R10, NHCOR11, OH, OCOR12, 1-4C alkoxy, 1-4C alkyl, CF3, COOH, CN, phenyl, heteroaryl, 1-4C alkoxycarbonyl, CONR13R14, SO3H, SO2NR15R16 or 1-6C hydroxyalkyl;
R9-R16=H, 1-4C alkyl, aralkyl or aryl;
K=C or N;
W=H, arylacyl, heteroarylacyl, aryl(1-3C)alkylsulfonyl, optionally substituted arylsulfonyl, aryl(1-4C)alkenylsulfonyl, 1-4C alkylsulfonyl, heteroaryl(1-3C)alkylsulfonyl, heteroarylsulfonyl, aryloxycarbonyl, 1-4C alkoxycarbonyl, aryl(1-3C)alkoxycarbonyl, arylaminocarbonyl, 1-6C alkylaminocarbonyl, aryl(1-3C)alkylaminocarbonyl or HOOC(0-3C)alkylcarbonyl or is absent if G is H;
X, Z=H, 1-3C alkyl, NR'R, NHC(NR'R)=NH, NHC(NHR')=NR, NHC(R')=NR, SC(NR'R)=NH, SC(NHR')=NR, C(NR'R)=NH, C(NHR')=NR or CR'=NR;
R', R=H, 1-6C alkyl, aralkyl or aryl, or
R' + R=a ring containing (CH2)p, and
p=2-5.
ACTIVITY - Anticoagulant; antithrombotic; cardiant; vasotropic; cerebroprotective.
H-D-Arg-Gly-Arg-thiazole (100 mug/kg + 2.57 mug/kg/minute) gave 117.72% inhibition of thrombosis in the rabbit deep vein thrombosis model described in Hemost., 71, 357 (1994).
MECHANISM OF ACTION - Factor Xa inhibitor.
BnSO2-(D)-Arg-Gly-Arg-thiazole exhibited an IC50 value of 0.00065 micro-M for factor Xa, 0.00045 micro-M for prothrombinase and 10 micro-M for thrombin.
USE - Useful as anticoagulants for treating thrombotic disorders, especially acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post-coronary angioplasty, thrombotically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, venous thrombosis, deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated intravascular coagulation, thrombotic thrombocytopenia purpura, thromboangiitis obliterans, thrombotic disease associated with heparin-induced thrombocytopenia, thrombotic complications associated with extracorporeal circulation, thrombotic complications associated with instrumentation, such as cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve, and conditions requiring the fitting of prosthetic devices; and inhibiting coagulation in biological samples.
ADVANTAGE - (I) are selective factor Xa inhibitors.
pp; 24 DwgNo 0/0

Title Terms: NEW; PEPTIDYL; HETEROCYCLE; COMPOUND; SELECT; FACTOR; INHIBIT; USEFUL; ANTICOAGULANT; TREAT; THROMBUS; DISORDER; INHIBIT; COAGULATE; VITRO
Derwent Class: B05
International Patent Class (Main): C07K-005/08
International Patent Class (Additional): A61K-038/03
File Segment: CPI

5/5/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013577122
WPI Acc No: 2001-061329/200107

Related WPI Acc No: 2001-025130; 2001-025131
XRAM Acc No: C01-016948

New organic derivatives as factor Xa inhibitors, useful for treating e.g. myocardial infarction, refractory angina or thrombotic stroke

Patent Assignee: COR THERAPEUTICS INC (CORT-N)
Inventor: SCARBOROUGH R M; ZHANG P; ZHU B

Number of Countries: 093 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200071508	A2	20001130	WO 2000US14208	A	20000524	200107 B
AU 200050413	A	20001212	AU 200050413	A	20000524	200115
EP 1185508	A2	20020313	EP 2000932732	A	20000524	200225
			WO 2000US14208	A	20000524	
JP 2003500383	W	20030107	JP 2000619765	A	20000524	200314
			WO 2000US14208	A	20000524	

Priority Applications (No Type Date): US 99135849 P 19990524
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200071508	A2	E	104	C07C-311/16	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200050413	A			C07C-311/16	Based on patent WO 200071508
EP 1185508	A2	E		C07C-311/16	Based on patent WO 200071508
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003500383	W		114	C07C-311/21	Based on patent WO 200071508

Abstract (Basic): WO 200071508 A2

NOVELTY - Organic derivatives of formula A-Y-D-E-G-J-Z-L (I) as factor Xa inhibitors are new.

DETAILED DESCRIPTION - Organic derivatives of formula A-Y-D-E-G-J-Z-L (I) and their isomers, salts, hydrates, solvates and prodrugs are new.

A=1-6C alkyl, 3-8C cycloalkyl, NR0R1, R0R1NC(NR2), R1C(=NR2), (R0R1N-C(=NR2)-N(R3), R0C(=NR2)-N(R3) or phenyl, naphthyl or monocyclic or fused heterocycle containing 5-10 ring comprising 1-4 N, O or S (optionally substituted by 1-2 R1);

R0, R1=H, halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, CN, NO2, CONR2R3, (CH2)mNR2R3, SO2NR2R3, SO2R2, CF3, OR2, NR2R3, (R2,R3)NC(=NR4), R2C(=NR4) or a 5-6 membered aromatic heterocycle containing 1-4 N, O or S (optionally ring substituted by 1-4 of halo, 1-4C alkyl, cyano-1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl or NO2;

R0 + R1=5-8 membered ring with 0-4 O, S or N;

R2, R3=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, OH, NH2, O-1-4C alkyl, N(1-4C alkyl, 1-4C alkyl) or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally ring substituted by 1-4 of halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, CN or NO2);

m=0-2;

Y=a bond, C(O), CH2, N(R4)CH2, CH2N(R4), N(R4), C(O)N(R4), N(R4)C(O), C(=NR4), C(=NR4)N(R), C(=NR4)CH2, C(=NR4)N(R)CH2SO2, O, SO2NR4 or N(R4)SO2;

R, R4=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally ring substituted by 1-4 of halo, 1-4C alkyl, 2-6C

alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, CN or NO2);

D=a bond or phenyl, naphthyl or mono or fused bicycloheterocyclo containing 5-10 ring atoms, 1-4 being N, O and/or S (all optionally ring substituted by 1-2 R1a);

R1a=halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, CN, NO2, (CH2)mR2aR3a, SO2NR2aR3a, SO2R2a, CF3, OR2a or a 5-6 membered aromatic heterocycle containing 1-4 of N, O and/or S (optionally substituted by 1-4 Qa);

Qa=halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, CN or NO2R2a, R3a=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, 0-4C alkylphenyl or 0-4C alkylnaphthyl (optionally ring substituted by 1-4 Qa);

E=N(R5)C(O), C(O)N(R5), N(R5)C(O)N(R6), SO2N(R5), N(R5)SO2N(R6) or N(R5)SO2N(R6)C(O);

R5, R6=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl or 0-4C alkyl-3-8C cycloalkyl; 0-4C alkylphenyl, 0-4C alkylnaphthyl or 0-4C alkylheteroaryl (optionally ring substituted by 1-4 Qa); 1-4C alkylCOOH, 1-4C alkylCOO-1-4C alkyl, 1-4C alkylCONH2, 1-4C alkylCON(1-4C alkyl)2, 2-4C alkylOH, 2-4C alkylNH2, 2-4C alkylO-1-4C alkyl or 2-4C alkylN(1-4C alkyl)2;

G=CR7R8, CR7aR8aCR7bR8b or CR7aR8aCR7bR8bCR7cR8c;

R7, R8, R7a-R7c, R8a-R8c=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally ring substituted by 1-4 Qa), 0-4C alkylCOOR9, 0-4C alkylC(O)NR9R10, 0-4C akylC(O)NR9-CH2CH2OR10, 0-4C alkylC(O)NR9(CH2CH2OR10)2, N(R9)COR10, 0-4C alkylN(R9)C(O)R10, 0-4C alkylN(R9)SO2R10, 0-4C alkylOH, 0-4C alkylNH2, 0-4C alkylO(1-4C alkyl), 0-4C alkylN(1-4C alkyl)2 or a natural or synthetic amino acid side chain; or

R5+R7 or R5+R7a=a ring;

R9, R10=H, 1-4C alkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted by 1-4 Qa); or

R9+R10=5-8 membered heterocycle;

J=a bond, C(O)NR11, N(R11)C(O), NR11, N(R11)CH2, O, S, SO2, SO, OCH2 or SO2CH2;

R11=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, 0-4C alkylphenyl, 0-4C alkylnaphthyl, 0-4C alkylheterocyclo containing 1-4 of N, O and/or S, CH2COO-1-4C alkyl, CH2COOH, CH2CON(1-4C alkyl)2, CH2CONH2, CO(1-4C alkyl), SO2-1-4C alkyl, CH2COO-1-4C alkylphenyl or CH2COO-1-4C alkylnaphthyl;

Z=phenyl, naphthyl or mono or fused bicyclic heterocycle containing 5-10 ring atoms and 1-4 of N, O and/or S (optionally ring substituted by 1-2 R1b);

R1b=halo, 1-4C alkyl, 2-6C alkenyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl, CN, NO2, NR2bR3b, SO2NR2bR3b, SO2R2b, CF3, OR2b, OCH2CH2OR2b, OCH2CH2NH2, OCH2CH2NR2bR3b, OCH2CONH2, OCH2CONR2bR3b, OCH2CH2NR2bR3b, OCH2COOR2b, N(R2b)CH2CH2OR2b, N(CH2CH2OR2b)2, N(R2b)C(O)R3b, N(R2b)SO2R3b or a 5-6 membered aromatic heterocycle containing 1-4 of N, O and/or S (optionally ring substituted by 1-4 Qa);

R2b, R3b=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl-3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally ring substituted by 1-4 Qa);

L=H, CN, C(O)NR12R13, (CH2)nR12R13, C(=NR12)NR12R13, OR12, NR12C(=NR12)NR12R13 or NR12C(=NR12)R13;

R12, R13=H, OR14, NR14R15, 1-4C alkyl, COO-1-4C alkyl or COO-0-4C alkylphenyl, COO-0-4C alkylnaphthyl, 0-4C alkylphenyl or 0-4C alkylnaphthyl (all optionally ring substituted by 1-4 Qa);

R14, R15=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C

cycloalkyl, 0-4C alkyl-3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally ring substituted by 1-4 Qa).

ACTIVITY - Anticoagulant; antianginal; cardiant; thrombolytic; cerebroprotective. Details of tests for the activity of (I) are given but no results are given.

MECHANISM OF ACTION - Factor Xa inhibitors.

USE - For treatment or prevention of conditions in mammals characterized by undesired thrombosis particularly acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post-coronary angioplasty, a thrombolytically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, venous thrombosis, deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, thromboangiitis obliterans, thrombotic disease associated with heparin-induced thrombocytopenia, thrombotic complications associated with extracorporeal circulation, thrombotic complications associated with instrumentation such as cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve and conditions requiring the fitting of prosthetic devices (all claimed). The compounds are also useful for inhibiting the coagulation of biological samples (all claimed).

pp; 104 DwgNo 0/0

Title Terms: NEW; ORGANIC; DERIVATIVE; FACTOR; INHIBIT; USEFUL; TREAT; MYOCARDIUM; INFARCTION; REFRACTORY; ANGINA; THROMBUS; STROKE
Derwent Class: B05
International Patent Class (Main): C07C-311/16; C07C-311/21
International Patent Class (Additional): A61K-031/18; A61K-031/198; A61K-031/33; A61K-031/341; A61K-031/4406; A61K-031/472; A61P-007/02; A61P-009/10; A61P-043/00; C07D-213/40; C07D-213/64; C07D-217/22; C07D-307/38; C07D-333/20; C07D-401/12
File Segment: CPI

5/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

013540925 **Image available**
WPI Acc No: 2001-025131/200103
Related WPI Acc No: 2001-025130; 2001-061329
XRAM Acc No: C01-007744

New substituted alkylene derivatives, used to treat and prevent e.g. myocardial infarction, unstable angina, embolic and thrombotic stroke, transient ischemic attacks, venous thrombosis and pulmonary embolus, are inhibitors of factor Xa

Patent Assignee: COR THERAPEUTICS INC (CORT-N)
Inventor: KANE-MAGUIRE K; SCARBOROUGH R M; SU T; ZHANG P; ZHU B
Number of Countries: 093 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200071511	A2	20001130	WO 2000US14205	A	20000524	200103	B
AU 200057235	A	20001212	AU 200057235	A	20000524	200115	
EP 1185509	A2	20020313	EP 2000942640	A	20000524	200225	
			WO 2000US14205	A	20000524		
JP 2003500386	W	20030107	JP 2000619768	A	20000524	200314	
			WO 2000US14205	A	20000524		

Priority Applications (No Type Date): US 99135849 P 19990524
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes

WO 200071511 A2 E 140 C07C-311/46
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
AU 200057235 A C07C-311/46 Based on patent WO 200071511
EP 1185509 A2 E C07C-311/46 Based on patent WO 200071511
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2003500386 W 152 C07C-311/46 Based on patent WO 200071511

Abstract (Basic): WO 200071511 A2

NOVELTY - Substituted alkylene derivatives (I) are new.

DETAILED DESCRIPTION - Substituted alkylene derivatives of formula (I) and their isomers, salts, hydrates, solvates and prodrugs are new.

A=1-6C alkyl, 3-8C cycloalkyl, NR2R3, C(NR2)NR2R3, C(NR2)R3, N(R3)C(NR2)NR2R3 or phenyl, naphthyl, 3-8-membered saturated, partially saturated or aromatic heterocyclic ring containing 1-4 of O, N or S or 8-10 aromatic or non-aromatic bicyclic heterocycle containing 1-4 of O, N or S (all optionally mono- or disubstituted);

R2, R3=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted by 1-4 of halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, CN, or NO2);

Y'=bond, C(O), N(R4), C(O)N(R4), N(R4)C(O), SO2, O, SO2N(R4) or N(R4)SO2;

R4=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted as in R2);

D'=bond, or phenyl, naphthyl or 5-10-membered mono- or bicyclic heterocyclic ring containing 1-4 of N, O and S (all optionally mono- or disubstituted);

E=C(O)N(R5), N(R5)C(O), N(R5)C(O)CH2, C(O)N(R5)CH2, N(R5)C(O)NR6, SO2NR5, NR5SO2NR6 or NR5SO2NR6C(O);

R5, R6=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, 1-4C carboxyalkyl, 1-4C alkoxycarbonyl 1-4C alkyl or 0-4C alkylphenyl, 0-4C alkylnaphthyl or 0-4Calkylheteroaryl (all optionally substituted as in R4);

G=CR7R8 or CR7aR8aCR7bR8b;

R7, R8, R7a, R8a, R7b, R8b=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkylcycloalkyl, 0-4C alkylimidazolyl, OR9, 0-4C alkylC(O)OR9, 0-4C alkylC(O)NR9R10, 0-4C alkylC(O)NR9(CH2)2OR10, 0-4C alkylC(O)NR9((CH2)2OR10)2 (sic), NR9C(O)R10, NR9SO2R10, a naturally occurring or synthetic amino acid side chain or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted by 1-4 of halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, CN, OH, 1-4C alkoxy, methoxy-1-4C alkoxy carboxymethoxy or NO2);

R9, R10=H, 1-4C alkyl, 3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted as for R4); or

R9+R10=part of 5-8-membered heterocyclic ring;

J=O, OCH(R11), S, SCH(R11), SO, SO2, S(O)CH(R11), or SO2CH(R11);

R11=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, 0-4C alkylphenyl, 0-4C alkylnaphthyl, 0-4C alkylheterocyclic ring containing 1-4 of O, S and N, CH2C(O)O 1-4C alkyl, CH2C(O)O 1-4C alkylphenyl or CH2C(O)O 1-4C alkylnaphthyl;

Z'=phenyl, naphthyl or mono- or bicyclic heterocycle containing 5-10 ring atoms, of which 1-4 are O, S and N (all optionally mono- or disubstituted);

L=H, CN, C(O)NR12R13, (CH2)nNR12R13, C(NR12)NR12R13, NR12R13, OR12, NR12C(NR12)NR12R13 or NR12C(NR12)R13;

R12, R13=H, OR14, NR14R15, 1-4C alkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted as for R4); and

R14, R15=R4.

Full definitions are given in the Definition field.

ACTIVITY - Anticoagulant; thrombolytic; cardiant; cerebroprotective; antianginal; vasotropic.

MECHANISM OF ACTION - Inhibitor of factor Xa.

In assays for inhibition of factor Xa, (I) desirably have an IC50 of 100 nM or less.

USE - (I) are used to prevent or treat characterized by undesired thrombosis selected from acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post-coronary angioplasty, thrombotically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, venous and deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, thromboangiitis obliterans, thrombotic disease associated with heparin-induced thrombocytopenia and thrombotic complications associated with extracorporeal circulation or with instrumentation such as cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve and conditions requiring the fitting of prosthetic devices. (I) are also used to inhibit coagulation of biological samples (all claimed).

pp; 140 DwgNo 0/0

Title Terms: NEW; SUBSTITUTE; ALKYLENE; DERIVATIVE; TREAT; PREVENT; MYOCARDIUM; INFARCTION; UNSTABLE; ANGINA; THROMBUS; STROKE; TRANSIENT; ISCHAEMIC; ATTACK; VEIN; THROMBOSIS; PULMONARY; EMBOLISM; INHIBIT; FACTOR

Derwent Class: B05

International Patent Class (Main): C07C-311/46

International Patent Class (Additional): A61K-031/18; A61K-031/277; A61K-031/496; A61K-031/501; A61P-007/02; A61P-009/00; A61P-043/00; C07D-213/74

File Segment: CPI

5/5/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

013540924 **Image available**

WPI Acc No: 2001-025130/200103

Related WPI Acc No: 2001-025131; 2001-061329

XRAM Acc No: C01-007743

New substituted alkylene derivatives, used to treat and prevent e.g. myocardial infarction, unstable angina, embolic and thrombotic stroke, transient ischemic attacks, venous thrombosis and pulmonary embolus, are inhibitors of factor Xa

Patent Assignee: COR THERAPEUTICS INC (CORT-N)

Inventor: KANE-MAGUIRE K; SCARBOROUGH R M; SU T; ZHANG P; ZHU B

Number of Countries: 093 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200071510	A2	20001130	WO 2000US14195	A	20000524	200103	B
AU 200052838	A	20001212	AU 200052838	A	20000524	200115	
EP 1183235	A2	20020306	EP 2000937700	A	20000524	200224	
			WO 2000US14195	A	20000524		
JP 2003500385	W	20030107	JP 2000619767	A	20000524	200314	
			WO 2000US14195	A	20000524		

Priority Applications (No Type Date): US 99135849 P 19990524
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200071510	A2	E	144	C07C-311/46	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200052838	A			C07C-311/46	Based on patent WO 200071510
EP 1183235	A2	E		C07C-311/46	Based on patent WO 200071510
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003500385	W		154	C07C-311/46	Based on patent WO 200071510

Abstract (Basic): WO 200071510 A2

NOVELTY - Substituted alkylene derivatives (I) are new.

DETAILED DESCRIPTION - Substituted alkylene derivatives of formula (I) and their isomers, salts, hydrates, solvates and prodrugs are new.

A=1-6C alkyl, 3-8C cycloalkyl, NR2R3, C(NR2)NR2R3, C(NR2)R3, N(R3)C(NR2)NR2R3 or phenyl, naphthyl, 3-8-membered saturated, partially saturated or aromatic heterocyclic ring containing 1-4 of O, N or S or 8-10 aromatic or non-aromatic bicyclic heterocycle containing 1-4 of O, N or S (all optionally mono- or disubstituted);

R2, R3=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 1-4C alkyl 3-8C cycloalkyl, phenyl, 1-4C alkylphenyl, naphthyl, 1-4C alkylnaphthyl, heterocyclic or 1-4C alkyl heterocyclic (with the aryl moieties optionally substituted by 1-4 of halo, CN, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 1-4C alkyl 3-8C cycloalkyl, amino, mono- or di-(1-4C) alkylamino or NO2); or

NR2R3=5-8-membered heterocycle containing 1-4 of O, N and S;

Y'=bond, 1-4C alkylene, 2-4C alkenylene, 2-4C alkynylene, CH2, C(O), C(NR4), N(R4), N(R4)CH2, CH2N(R4), C(O)N(R4), N(R4)C(O), SO2, O, SO2N(R4) or N(R4)SO2;

R4=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, aryl, 1-4C alkylaryl, heterocycle or 1-4C alkylheterocycle (with the aryl moieties optionally substituted by 1-4 of halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 1-4C alkyl 3-8C cycloalkyl, CN or NO2);

D'=bond or phenyl, naphthyl or 5-6-membered aromatic heterocyclic ring containing 1-4 of N, O and S (all optionally mono- or disubstituted);

R2a, R3a=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 1-4C alkyl 3-8C cycloalkyl, phenyl, 1-4C alkylphenyl, naphthyl, 1-4C alkylnaphthyl, heterocyclic or 1-4C alkyl heterocyclic (with the aryl moieties optionally substituted by 1-4 of halo, CN, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 1-4C alkyl 3-8C cycloalkyl, amino, mono- or di-(1-4C) alkylamino or NO2); or

NR2aR3a=5-8-membered heterocycle containing 1-4 of O, N and S;

E=C(O)N(R5), N(R5)C(O), N(R5), or N(R5)(CH)0-2 (sic);

R5=H, 1-4C alkyl, aryl, 1-4C alkylaryl, heteroaryl, 1-4C alkylheteroaryl, 1-4C carboxyalkyl, 1-4C alkoxycarbonyl 1-4C alkyl or 1-4C alkyl-C(O)NR2bR3bR2b, R3b=H, 1-4C alkyl aryl, 1-4C alkylaryl, heterocycle or 1-4C alkylheterocycle; or

NR2bR3b=5-8-membered heterocycle containing 1-4 of O, N and S (optionally mono- or disubstituted);

R6, R6a, R7, R7a, R7b, R7c=H, alkyl, 0-2C alkylaryl or 0-2C alkylheteroaryl (where aryl is optionally substituted by 1 or 2 of halo, OR9, CN, CF3, NO2, 0-2C alkyl-O-2-4C alkyl-O-R9, 0-2C alkyl-C(O)NR9R10, 0-2C alkyl-C(O)OR8 or 0-2C alkyl-NR9R10), 0-2C

alkyl-C(O)OR8, 0-2C alkyl-C(O)NR9R10, 0-2C alkyl-O-R9, 0-2C alkyl-O-2-4C alkyl-O-R9, 0-2C alkyl-O-2-4C alkyl-NR9R10, 0-2C alkyl-NR9R10, 0-2C alkyl-N(R9)C(O)R10, 0-2C alkyl-N(R9)C(O)OR10, 0-2C alkyl-N(R8)C(O)NR9R10, 0-2C alkyl-N(R9)SO2R10, 0-2C alkyl-N(R8)SO2NR9R10 or a naturally occurring or synthetic amino acid side chain;

R8-R10=H, 1-4C alkyl, 0-4C alkylaryl or 0-4C alkylheterocycle; or

NR9R10=5-8-membered heterocycle containing 1-4 of O, N and S (optionally substituted by 1 or 2 of R1d);

R1d=halo, 1-4C alkyl, CN, NO2, C(O)NR2dR3d, C(O)OR2d, (CH2)0-2NR2dR3d, SO2NR2dR3d, SO2R2d, CF3 or (CH2)0-2OR2d;

R2d, R3d=H, 1-4C alkyl or 1-4C alkylaryl;

J=O, OCH(R11), S, SCH(R11), SO, SO2, S(O)CH(R11), or SO2CH(R11);

R11=H, alkyl, 0-2C alkylaryl or 0-2C heteroaryl (where the aryl is optionally substituted by 1 or 2 of halo, OR9, CN, CF3, NO2, 0-2C alkyl-O-2-4C alkyl-O-R9, 0-2C alkyl-C(O)NR9R10, 0-2C alkyl-C(O)OR8 or 0-2C alkyl-NR9R10;

K'=phenyl, naphthyl or mono- or bicyclic heterocycle containing 5-10 ring atoms, of which 1-4 are O, S and N (all optionally mono- or disubstituted);

L=H, CN, C(O)NR12R13, (CH2)0-2NR12R13, C(NR12)NR12R13, NR12R13, OR12, NR12C(NR12)NR12R13 or NR12C(NR12)R13;

R12, R13=H, OR14, NR14R15, 1-4C alkyl, 0-4C alkylaryl, 1-4C alkoxycarbonyl, 0-4C alkylaryloxycarbonyl, OC(O)NR14R15 or OC(O)NR14R15(CH2)0-4NR14R15 (sic); or

NR12R13=5-8-membered heterocycle containing 1-4 of O, N and S (optionally substituted by halo, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, CN, NO2 or 0-4C alkoxycabonyl); and

R14, R15=H, 1-4C alkyl, 0-4C alkylaryl or 0-4C arylalkyl; or

NR14R15=5-8-membered heterocycle containing 1-4 of O, N and S (optionally substituted as for NR12R13).

K' has not been used and Z' has not been defined.

Full definitions are given in the Definition section.

ACTIVITY - Anticoagulant; thrombolytic; cardiant; antianginal; cerebroprotective; vasotropic.

MECHANISM OF ACTION - Inhibitors of factor Xa.

In assays for inhibition of factor Xa, (I) desirably have an IC50 of 100 nM or less.

USE - (I) are used to prevent or treat characterized by undesired thrombosis selected from acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post-coronary angioplasty, thrombotically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, venous and deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, thromboangiitis obliterans, thrombotic disease associated with heparin-induced thrombocytopenia and thrombotic complications associated with extracorporeal circulation or with instrumentation such as cardiac or other intravascular catheterization, **intra - aortic** balloon **pump** , coronary stent or cardiac valve and conditions requiring the fitting of prosthetic devices. (I) are also used to inhibit coagulation of biological samples (all claimed).

pp; 144 DwgNo 0/0

Title Terms: NEW; SUBSTITUTE; ALKYLENE; DERIVATIVE; TREAT; PREVENT; MYOCARDIUM; INFARCTION; UNSTABLE; ANGINA; THROMBUS; STROKE; TRANSIENT; ISCHAEMIC; ATTACK; VEIN; THROMBOSIS; PULMONARY; EMBOLISM; INHIBIT; FACTOR

Derwent Class: B05

International Patent Class (Main): C07C-311/46

International Patent Class (Additional): A61K-031/18; A61K-031/33;

A61K-031/397; A61K-031/40; A61K-031/401; A61K-031/4164; A61K-031/44; A61K-031/4427; A61K-031/4453; A61K-031/472; A61K-031/4725; A61K-031/495; A61K-031/496; A61K-031/5375; A61K-031/55; A61P-007/02; A61P-009/10; C07D-205/04; C07D-207/16; C07D-207/20; C07D-207/22; C07D-207/32; C07D-207/325; C07D-213/72; C07D-213/74; C07D-213/75; C07D-213/82; C07D-217/22; C07D-231/12; C07D-233/68; C07D-295/18; C07D-295/22; C07D-295/26
File Segment: CPI

5/5/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013540923 **Image available**
WPI Acc No: 2001-025129/200103
Related WPI Acc No: 2001-016406
XRAM Acc No: C01-007742

New substituted alkylene derivatives, used to treat and prevent e.g. myocardial infarction, unstable angina, embolic stroke, transient ischemic attacks, venous thrombosis and coagulopathy, are inhibitors of factor Xa

Patent Assignee: COR THERAPEUTICS INC (CORT-N)
Inventor: SCARBOROUGH R M; SONG Y; SU T; ZHAOZHONG J J; ZHU B
Number of Countries: 093 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200071507	A2	20001130	WO 2000US14196	A	20000524	200103	B
AU 200052839	A	20001212	AU 200052839	A	20000524	200115	
EP 1181270	A2	20020227	EP 2000937701	A	20000524	200222	
			WO 2000US14196	A	20000524		
JP 2003500382	W	20030107	JP 2000619764	A	20000524	200314	
			WO 2000US14196	A	20000524		

Priority Applications (No Type Date): US 99135820 P 19990524
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200071507	A2	E	117	C07C-311/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200052839	A			C07C-311/00	Based on patent WO 200071507
EP 1181270	A2	E		C07C-311/00	Based on patent WO 200071507
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003500382	W		129	C07C-311/46	Based on patent WO 200071507

Abstract (Basic): WO 200071507 A2

NOVELTY - Substituted alkylene derivatives (I) are new.

DETAILED DESCRIPTION - Substituted alkylene derivatives of formula (I) and their isomers, salts, hydrates, solvates and prodrugs are new.

A=1-6C alkyl, 3-8C cycloalkyl, NR2R3, C(NR2)NR2R3, C(NR2)R3, N(R3)C(NR2)NR2R3 or phenyl, naphthyl, 3-8-membered saturated, partially saturated or aromatic heterocyclic ring containing 1-4 of O, N or S or 8-10 aromatic or non-aromatic bicyclic heterocycle containing 1-4 of O, N or S (all optionally mono or disubstituted);

Y'=bond, CH2, C(O), N(R4), N(R4)CH2, C(NR4), C(O)N(R4), N(R4)C(O), SO2, O, SO2N(R4) or N(R4)SO2;

R4=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted by 1-4 of halo, CN, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl or NO2);

D'=bond or phenyl, naphthyl or 5-10-membered mono- or bicyclic heterocyclic ring containing 1-4 of N, O and S (all optionally mono- or disubstituted);

E=C(O)N(R5), N(R5)C(O), N(R5)C(O)N(R6), SO2N(R5), N(R5)SO2N(R6) or N(R5)SO2N(R6)C(O);

R5, R6=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C heteroaryl, 1-4C alkyl CO2H, 1-4C alkyl C(O)O-1-4C alkyl or 0-4C alkylphenyl, 0-4C alkylnaphthyl or 0-4C alkylheteroaryl (all optionally substituted as for R4);

G=CR7R8 or CR7aR8aCR7bR8b;

R7, R8, R7a, R8a, R7b, R8b=H, alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, 0-4C alkyl-C(O)OR9, 0-4C alkyl-C(O)NR9R10, 0-4C alkyl-C(O)NR9(CH2)2OR10, 0-4C alkyl-C(O)NR9((CH2)2OR10)2 (sic), NR9C(O)R10, NR9SO2R10, naturally occurring or synthetic amino acid side chain or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted as for R4);

R8, R9=H, 1-4C alkyl, 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted as for R4); or

R8+R9=residue of 5-8-membered heterocyclic ring);

J=bond, C(O)N(R11)(CH2)0-2, N(R11)(CH2)0-2C(O), or N(R11)(CH2)0-2;

R11=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl, 0-4C alkylphenyl, 0-4C alkylnaphthyl, 0-4C alkylheterocyclic ring containing 1-4 of O, S and N, CH2C(O)O-1-4C alkyl, CH2C(O)O-1-4C alkylphenyl or CH2C(O)O-1-4C alkylnaphthyl; or

J+G=cyclic ring structure;

Z'=phenyl, naphthyl or mono- or bicyclic heterocycle containing 5-10 ring atoms, of which 1-4 are O, S and N (all optionally mono or disubstituted);

L=H, CN, C(O)NR12R13, (CH2)nNR12R13, C(NR12)NR12R13, NR12R13, OR12, NR12C(NR12)NR12R13 or NR12C(NR12)R13;

R12, R13=H, OR14, NR14R15, 1-4C alkyl, C(O)O-1-4C alkyl or 0-4C alkylphenyl, 0-4C alkylnaphthyl, C(O)O-0-4C alkylphenyl or C(O)O-0-4C alkylnaphthyl (all optionally substituted as for R4); and

R14, R15=H, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl or 0-4C alkylphenyl or 0-4C alkylnaphthyl (both optionally substituted by 1-4 of halo, CN, 1-4C alkyl, 2-6C alkenyl, 2-6C alkynyl, 3-8C cycloalkyl, 0-4C alkyl 3-8C cycloalkyl or NO2).

n is not defined.

Full definitions are given in the definition section.

ACTIVITY - Anticoagulant; thrombolytic; cardiant; antianginal; cerebroprotective; vasotropic.

MECHANISM OF ACTION - Inhibitors of factor Xa.

In assays for inhibition of factor Xa, (I) desirably have an IC50 of 100 nM or less.

USE - (I) are used to prevent or treat characterized by undesired thrombosis selected from acute coronary syndrome, myocardial infarction, unstable angina, refractory angina, occlusive coronary thrombus occurring post-thrombolytic therapy or post-coronary angioplasty, thrombotically mediated cerebrovascular syndrome, embolic stroke, thrombotic stroke, transient ischemic attacks, venous and deep venous thrombosis, pulmonary embolus, coagulopathy, disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, thromboangiitis obliterans, thrombotic disease associated with heparin-induced thrombocytopenia and thrombotic complications associated with extracorporeal circulation or with instrumentation such as cardiac or other intravascular catheterization, **intra - aortic**

balloon **pump** , coronary stent or cardiac valve and conditions requiring the fitting of prosthetic devices. (I) are also used to inhibit coagulation of biological samples (all claimed).

pp; 117 DwgNo 0/0

Title Terms: NEW; SUBSTITUTE; ALKYLENE; DERIVATIVE; TREAT; PREVENT; MYOCARDIUM; INFARCTION; UNSTABLE; ANGINA; STROKE; TRANSIENT; ISCHAEMIC; ATTACK; VEIN; THROMBOSIS; INHIBIT; FACTOR

Derwent Class: B05

International Patent Class (Main): C07C-311/00; C07C-311/46

International Patent Class (Additional): A61K-031/167; A61K-031/18; A61K-031/277; A61K-031/40; A61K-031/472; A61K-031/4725; A61P-009/00; A61P-009/10; C07D-207/16; C07D-217/22; C07D-401/06; C07M-007-00

File Segment: CPI

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Set     Items   Description
S1        139   IABC OR IABP OR (INTRAAORTIC OR INTRA()AORTIC)(2N)(PUMP???
            OR COUNTERPULS? OR COUNTER()PULS?)
S2     946691   HYPOTHERM? OR HYPO()THERM? OR COOL???
S3         10   S1 AND S2
S4         10   IDPAT (sorted in duplicate/non-duplicate order)
S5         10   IDPAT (primary/non-duplicate records only)
S6          0   S5 AND IC=A61M
? show files
File 347:JAPIO Oct 1976-2003/Jan(Updated 030506)
         (c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200330
         (c) 2003  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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Inventor Search

6/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012151489 **Image available**
WPI Acc No: 1998-568401/199848
Related WPI Acc No: 1997-402335; 1997-402340; 1998-179125; 1998-251018; 2002-267757; 2002-453143; 2002-616998
XRPX Acc No: N98-442178

System for transmyocardial direct coronary revascularisation - includes creating transmyocardial bloodflow passageway between a chamber of the heart and a coronary vein

Patent Assignee: TRANSVASCULAR INC (TRAN-N)
Inventor: FLAHERTY J C; JENSEN M; LAMSON T C; **MACHOLD T R** ; MAKOWER J; TUMAS M W; WHITT J B; FLAHERTY C J
Number of Countries: 080 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9846115	A2	19981022	WO 98US7384	A	19980413	199848	B
AU 9869686	A	19981111	AU 9869686	A	19980413	199912	
EP 981295	A2	20000301	EP 98915524	A	19980413	200016	
			WO 98US7384	A	19980413		
MX 9909273	A1	20000201	MX 999273	A	19991011	200123	
JP 2001527440	W	20011225	JP 98544160	A	19980413	200204	
			WO 98US7384	A	19980413		
AU 744343	B	20020221	AU 9869686	A	19980413	200223	
AU 200242371	A	20020718	AU 9869686	A	19980413	200258	N
			AU 200242371	A	20020520		

Priority Applications (No Type Date): US 97837295 A 19970411; AU 200242371 A 20020520
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9846115	A2	E		A61B-000/00	
Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
AU 9869686	A			A61B-000/00	Based on patent WO 9846115
EP 981295	A2	E		A61B-017/00	Based on patent WO 9846115
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
MX 9909273	A1			A61B-000/00	
JP 2001527440	W		76	A61M-029/02	Based on patent WO 9846115
AU 744343	B			A61B-017/36	Previous Publ. patent AU 9869686 Based on patent WO 9846115
AU 200242371	A			A61M-029/02	Div ex application AU 9869686 Div ex patent AU 744343

Abstract (Basic): WO 9846115 A

The method comprises the steps of creating a transmyocardial bloodflow passageway between a chamber of the heard and a coronary vein. The passageway is formed such that blood will flow from the chamber of the heart, through the transmyocardial bloodflow passageway, and through the lumen of the coronary vein, in a retrograde direction,

so as to perfuse the region of the myocardium.

The method further comprises forming a fistulous connection between the coronary vein and the adjacent coronary artery, at a location which is downstream of the transmyocardial bloodflow passageway, such that blood may flow from the chamber of the heart, through the transmyocardial bloodflow passageway, through the vein, through the fistulous connection, and into the adjacent coronary artery so as to provide enhanced bloodflow through the coronary artery. The next step involves blocking the lumen of the coronary vein at a location which is upstream of the transmyocardial bloodflow passageway.

ADVANTAGE - The apparatus improves myocardial perfusion, on an ongoing basis, without the need for continued placement of a catheter-mounted **counterpulsation** balloon within the coronary sinus and deployment of extracorporeal instrumentation.

Dwg.1/12

Title Terms: SYSTEM; DIRECT; CORONARY; PASSAGE; CHAMBER; HEART; CORONARY; VEIN
Derwent Class: P31; P32; P34
International Patent Class (Main): A61B-000/00; A61B-017/00; A61B-017/36; A61M-029/02
International Patent Class (Additional): A61B-017/11; A61B-018/00; A61F-002/06; A61F-002/14; A61L-027/00; A61M-001/12
File Segment: EngPI

6/5/2 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

01007577 **Image available**

INTRA-AORTIC BALLOON COUNTERPULSATION **WITH CONCURRENT HYPOTHERMIA**
CONTRE-PULSATION DE BALLONNET INTRA-AORTIQUE AVEC HYPOTHERMIE CONCURRENTE

Patent Applicant/Assignee:
RADIANT MEDICAL INC, 250 Chesapeake Drive, Redwood City, CA 94063, US, US (Residence), US (Nationality)
Inventor(s):
DAE Michael W , 41 Lagoon Vista, Belmont, CA 94002, US,
MACHOLD Timothy R , 65 Bernal Ave, Moss Beach, CA 94038, US
Legal Representative:
BUYAN Robert D (agent), Stout, Uxa, Buyan & Mullins LLP, 4 Venture, Suite 300, Irvine, CA 92618, US,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200337158 A2 20030508 (WO 0337158)
Application: WO 2002US33287 20021018 (PCT/WO US0233287)
Priority Application: US 200115220 20011026
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61B
Publication Language: English
Filing Language: English

the Patent

English Abstract

Devices, systems and methods for treating disorders characterized by low cardiac output. The devices, systems and methods use intra-aortic balloon couterpulsation in combination with hypothermia of all or a portion of a human or veterinary patient's body to improve coronary perfusion and cardiac output. To effect the hypothermia, a heat exchange catheter may be positioned in the patient's vasculature separately from the intra-aortic balloon **counterpulsation** catheter. Alternatively, a combination intra-aortic balloon **counterpulsation** /heat exchange catheter may be utilized. Such combination catheter comprises a) a catheter sized for insertion into the aorta, b) a **counterpulsation** balloon and c) a heat exchanger. A drive/control system receives temperature and electrocardiograph signals and drives the inflation/deflation of the **counterpulsation** balloon as well as the heating/cooling of the heat exchanger.

Legal Status (Type, Date, Text)
Publication 20030508 A2 Without international search report and to be republished upon receipt of that report.

```
Set     Items   Description
S1         12   AU='DAE M W':AU='DAE MICHAEL W'
S2        103   AU='MACHOLD T':AU='MACHOLD TIMOTHY R'
S3        103   S1:S2
S4          3   S3 AND (COUNTERPULS? OR COUNTER()PULS?)
S5          3   IDPAT (sorted in duplicate/non-duplicate order)
S6          2   IDPAT (primary/non-duplicate records only)
? show files
File 347:JAPIO Oct 1976-2003/Jan(Updated 030506)
         (c) 2003 JPO & JAPIO
File 348:EUROPEAN PATENTS 1978-2003/Apr W04
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030508,UT=20030501
         (c) 2003 WIPO/Univentio
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200330
         (c) 2003  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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FT Patents

7/5,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00725070
CONTROL OF LIFE SUPPORT SYSTEMS
PATENT ASSIGNEE:
UNIVERSITY OF MANITOBA, (947813), 311 Administration Building, Winnipeg, Manitoba R3T 2N2, (CA), (Proprietor designated states: all)
INVENTOR:
MUTCH, William, Alan, C., 89 Cordova Street, Winnipeg, Manitoba R3N 0Z9, (CA)
LEFEVRE, Gerald, Robin, 1118 Wolseley Avenue, Winnipeg, Manitoba R3P 0G9, (CA)
LEGAL REPRESENTATIVE:
Johnstone, Helen Margaret et al (70781), Urquhart-Dykes & Lord Tower House Merrion Way, Leeds LS2 8PA, (GB)
PATENT (CC, No, Kind, Date): EP 904116 A2 990331 (Basic)
EP 904116 B1 030115
WO 95024936 950921
APPLICATION (CC, No, Date): EP 95911177 950315; WO 95CA144 950315
PRIORITY (CC, No, Date): GB 9405002 940315
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: A61M-001/10; A61M-001/36
CITED PATENTS (EP B): WO 93/10844 A; FR 2624744 A; GB 2025662 A
CITED REFERENCES (EP B):
ASAIO TRANSACTIONS, vol. 34, no. 3, pages 480-484, XP 000053170 MAEDA K ET AL 'PREDICTIVE CONTROL BY PHYSICAL ACTIVITY RATE OF A TOTAL ARTIFICIAL HEART DURING EXERCISE';
NOTE: No A-document published by EPO
LEGAL STATUS (Type, Pub Date, Kind, Text):

Examination:	020102 A2	Date of dispatch of the first examination report: 20011112
Application:	951129 A	International application (Art. 158(1))
Grant:	030115 B1	Granted patent
Application:	990331 A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	990331 A2	Date of filing of request for examination: 961014
Licenses:	990331 A2	Licences 01-00 excl.; Biovar Life Support Inc. (5890); 303 -275 Broadway Avenue, Winnipeg; Manitoba, Canada R3C 4M6; (CA); (licensee designated states: AT;BE;CH;DE;DK;ES;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT ;SE)

LANGUAGE (Publication,Procedural,Application): English; English; English

...SPECIFICATION fluid to any organ. For example, the principles of the invention may be used in **intra aortic** balloon **counterpulsation** (**IABC**), the technique used to support patients, usually following CPB, when they are unable to maintain...to 28(degree)C commenced immediately in both groups. Temperature was altered using a Travenol **heat exchanger** . In both groups of animals, the mean cerebral perfusion pressure (CPP; MAP - mean CSFP) was...30 min time frame without exceeding a temperature gradient of 8(degree)C between the **heat exchanger** and the nasopharyngeal measurement sites. The MAP remained stable over the two temperatures in both...

7/5,K/2 **(Item 2 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

01007577 **Image available**
INTRA - AORTIC **BALLOON** COUNTERPULSATION **WITH CONCURRENT HYPOTHERMIA**
Patent Applicant/Assignee:
RADIANT MEDICAL INC, 250 Chesapeake Drive, Redwood City, CA 94063, US, US (Residence), US (Nationality)
Inventor(s):
DAE Michael W, 41 Lagoon Vista, Belmont, CA 94002, US,
MACHOLD Timothy R, 65 Bernal Ave, Moss Beach, CA 94038, US,
Legal Representative:
BUYAN Robert D (agent), Stout, Uxa, Buyan & Mullins LLP, 4 Venture, Suite 300, Irvine, CA 92618, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200337158 A2 20030508 (WO 0337158)
Application: WO 2002US33287 20021018 (PCT/WO US0233287)
Priority Application: US 200115220 20011026
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61B
Publication Language: English
Filing Language: English

English Abstract
Devices, systems and methods for treating disorders characterized by low cardiac output. The devices, systems and methods use intra-aortic balloon couterpulsation in combination with hypothermia of all or a portion of a human or veterinary patient's body to improve coronary perfusion and cardiac output. To effect the hypothermia, a **heat exchange** catheter may be positioned in the patient's vasculature separately from the **intra - aortic** balloon **counterpulsation** catheter. Alternatively, a combination **intra - aortic** balloon **counterpulsation / heat exchange** catheter may be utilized. Such combination catheter comprises a) a catheter sized for insertion into the aorta, b) a counterpulsation balloon and c) a **heat exchanger** . A drive/control system receives temperature and electrocardiograph signals and drives the inflation/deflation of the counterpulsation balloon as well as the heating/cooling of the **heat exchanger** .

Legal Status (Type, Date, Text)
Publication 20030508 A2 Without international search report and to be republished upon receipt of that report.

7/5,K/3 **(Item 3 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

00802783 **Image available**

AORTIC SHUNT WITH SPINAL PERFUSION AND COOLING DEVICE

Patent Applicant/Assignee:
COAXIA INC, 70 East 77th Street, New York, NY 10021-1181, US, US (Residence), US (Nationality)
Inventor(s):
BARBUT Denise R, 70 East 70th Street, New York, NY 10021, US,
Legal Representative:
KAPPOS John C (agent), Lyon & Lyon LLP, 633 West Fifth Street, Suite 4700, Los Angeles, CA 90071-2066, US,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200136035 A1 20010525 (WO 0136035)
Application: WO 2000US30468 20001103 (PCT/WO US0030468)
Priority Application: US 99440989 19991116
Designated States: AU CA JP
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
Main International Patent Class: A61M-035/00
International Patent Class: A61M-001/00; A61M-031/00; A61B-019/00
Publication Language: English
Filing Language: English

English Abstract
An intravascular device and methods of for performing spinal perfusion are disclosed. The device comprises an intra-aortic and extra-aortic component for perfusing spinal arteries during thoracoabdominal surgeries. The intra-aortic component comprises a catheter (1) having a shunt (10) releasably-mounted on a distal end of the catheter. An expandable occluder (15) is disposed about the shunt for occluding the aortic lumen. The extra-aortic component comprises a tubular member (30) having a lumen communicating with first and second ends. The first end is adapted for attachment to the shunt. The second end of the second tubular member (24) is attached to a plurality of tubular branches (30). A cooler (50) may be attached to the second tubular member for providing hypothermic perfusion. When the intra-aortic component is attached to the extra-aortic component, blood flows from the proximal aorta (100) to the spinal arteries (110) through the lumens of the tubular branches.

Legal Status (Type, Date, Text)
Publication 20010525 A1 With international search report.
Publication 20010525 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination 20011025 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
... al., U.S. Patent No. 5,746,709, incorporated herein by reference, which involves an **intra - aortic pump** . Disadvantages associated with this device are that (1) puncturing of the aorta is required for...

...branch for monitoring perfusion pressure to the spinal arteries.

In another embodiment, a cooler, or **heat exchanger** , is attached to the second tubular member for providing hypothermic perfusion to the spinal cord...

7/5,K/4 **(Item 4 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

00567161 **Image available**
SPHERICALLY-SHAPED BIOMEDICAL IC
CIRCUIT INTEGRE BIOMEDICAL SPHERIQUE
Patent Applicant/Assignee:
BALL SEMICONDUCTOR INC,
ISHIKAWA Akira,
TAKEDA Nabuo,
AHN Suzanne I,
AHN Samuel S,
HAYS Steven R,
GAFFNEY F Andrew,
Inventor(s):
ISHIKAWA Akira,
TAKEDA Nabuo,
AHN Suzanne I,
AHN Samuel S,
HAYS Steven R,
GAFFNEY F Andrew,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200030534 A1 20000602 (WO 0030534)
Application: WO 99US27904 19991124 (PCT/WO US9927904)
Priority Application: US 98110107 19981125
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: A61B-005/00
Publication Language: English

English Abstract
The present invention provides a biomedical semiconductor integrated circuit device that is spherical in shape (ball) for implantation in the biological medium (500) to be monitored or affected. The spherical-shaped IC (510) may include transducers (560) to perform a wide variety of instrumentation, monitoring and test or treatment regimes. The curvature of the semiconductor ball (510) allows for fabrication of more than one sensor on the ball to provide for three dimensional physiological parameter (515) monitoring. The ball (510) can be adapted to body tissue and/or tissue prosthetics, artificial organs, and biomedical implements by fixation, floatation or attachment to a catheter (505). More than one ball having one or more sensors can be used. Powering of the ball can be provided by electromagnetic coupling or on-board battery sourcing (battery ball).

Detailed Description
... device assist device, total artificial output and/or total systemic and pulmonary blood flow.

heart, **intraaortic** balloon **pump** Implantable within the mechanism, Blood **heat exchanger** , Monitors and controls device pressure, flow, velocity, or on surface of intracorporeal or blood oxygenator...

7/5,K/5 **(Item 5 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

00548795 **Image available**
SYSTEM AND METHODS FOR CATHETER PROCEDURES WITH CIRCULATORY SUPPORT IN HIGH RISK PATIENTS

Patent Applicant/Assignee:
CARDEON CORPORATION,
Inventor(s):
SAMSON Wilfred J,
MACOVIAK John A,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200012168 A1 20000309 (WO 0012168)
Application: WO 99US19738 19990830 (PCT/WO US9919738)
Priority Application: US 9898724 19980901
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: A61M-025/10
International Patent Class: A61B-017/12
Publication Language: English

English Abstract
A system and methods are described for performing catheter based procedures on high risk patients that mitigate the risk to the patient and extend the acceptable time window for response when emergencies or complications arise. The system combines a therapeutic or diagnostic catheter subsystem with a selective aortic perfusion and cardiopulmonary bypass subsystem. The catheter subsystem may include catheters for angioplasty, stent delivery, atherectomy, valvuloplasty or other diagnostic or therapeutic procedures. The selective aortic perfusion and cardiopulmonary bypass subsystem generally includes catheters and/or cannulas for draining blood from the patient's venous or arterial system, a perfusion pump, a blood oxygenator, at least one blood **heat exchanger** and catheters and/or cannulas for perfusing oxygenated blood into the patient's arterial system. The arterial perfusion catheters and/or cannulas are constructed with an upstream flow control member located in the patient's ascending aorta and a downstream flow control member located in the patient's descending aorta. The external flow control members may take the form of inflatable occlusion balloons and/or selectively deployable external catheter flow control valves. The external flow control members may be mounted on a single elongated catheter or cannula shaft or they may be mounted on separate catheter or cannula shafts for independent placement and deployment.

Detailed Description
... to patients during high risk catheter procedures. These proposed strategies have include perfusion balloon catheters, **intra - aortic** balloon **pumps** , percutaneous or femoral-femoral cardiopulmonary bypass, 2 0 retrograde coronary perfusion, and single-balloon intra...

...catheters can be used in conjunction with the system and methods of the

present invention.

Intra - aortic balloon **pumps** (IAPB) are balloon catheters that provide counterpulsation to reduce the cardiac pumping load and to...s venous or arterial system, a perfusion pump, a blood oxygenator, at least one blood **heat exchanger** and catheters and/or 0 cannulas for perfusing oxygenated blood into the patient's arterial...a venous blood reservoir, a blood oxygenator, a perfusion pump and at least one blood **heat exchanger** and a cardioplegia source. The output of the cardiopulmonary support system 1 14 is connected...oxygenated blood from the patient. A perfusion pump redirects the oxygenated blood through an optional **heat exchanger** to cool or warm the blood, then to an arch perfusion lumen of the perfusion...

7/5,K/6 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00504841 **Image available**
METHOD AND APPARATUS FOR PROVIDING A CONDUCTIVE, AMORPHOUS NON-STICK COATING

Patent Applicant/Assignee:
MEDQUEST PRODUCTS INC,
Inventor(s):
AJIT Kumar B,
PRATAP Khanwilkar,
DON B Olsen,

Patent and Priority Information (Country, Number, Date):
Patent: WO 9936193 A1 19990722
Application: WO 98US8917 19980709 (PCT/WO US9808917)
Priority Application: US 9871778 19980119
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: B05D-003/00
International Patent Class: B26B-021/54; B32B-009/00; B32B-019/00; C23C-008/00; C23C-014/00; C23C-016/00; H05H-001/24
Publication Language: English

English Abstract
A conductive, non-stick coating (62) is provided using a ceramic material which is conductive, flexible and provides a surface which exhibits the property of lubricity. A room or near room temperature manufacturing process produces a coating of titanium nitride on a substrate, where the coating is amorphous if the substrate is a solid material including plastics, composites, metals, magnets and ceramics, enabling the substrate to bend without damaging the coating. The coating can also be applied as a conformal coating on a variety of substrate shapes, depending upon the application. The coating is biocompatible and can be applied to a variety of medical devices.

Detailed Description
... benefit from the present invention include blood pumps such as Ventricular Assist Devices, Artificial Hearts, **Intra Aortic** Balloon **Pumps**

and Impellers. The coating is applied to most plastic, metallic and ceramic components including magnets...and ligatures, microtomes, surgical meshes, tonsil dissectors, and vascular clamps, stereotaxis instruments and accessories, and **heat exchangers** .

7/5,K/7 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00492750 **Image available**
METHODS AND DEVICES FOR CANNULATING A PATIENT'S BLOOD VESSEL
Patent Applicant/Assignee:
HEARTPORT INC,
Inventor(s):
ROMLEY Richard M,
DONLON Brian S,
CORVI Timothy J,
FAN Sylvia W,
KOMTEBEDDE Jan,
LEPULU Keke J,
LUCATERO Sylvester B,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9924102 A1 19990520
Application: WO 98US23644 19981105 (PCT/WO US9823644)
Priority Application: US 97965273 19971106
Designated States: AU CA JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: A61M-025/00
International Patent Class: A61M-031/00
Publication Language: English

English Abstract
This invention is a method, a device for introduction of a catheter (6C), and/or delivering a fluid, such as oxygenated blood, to a patient's vascular system including a cannula (2C) having an expandable portion (4C). The expandable portion (4C) is movable from a collapsed position to an expanded position. The expandable portion (4C) is inserted into the patient in the collapsed position which facilitates introduction and advancement of the cannula (2C) through the patient's blood vessel. After introduction into the patient, the expandable portion (4C) is moved to the expanded position. The expandable portion (4C) protects the blood vessel against fluid forces when flowing a fluid through the cannula (2C), and protects the vessel from contact with the catheter (6C) advanced through the cannula (2C).

Detailed Description
... 1 5 For example. the catheter 6 may be a PTCA catheter. stent delivery catheter, **intraaortic** balloon **pump** , atherectomy catheter, TMR catheter, diagnostic catheter, biopsy catheter, or a general vascular occlusion catheter, Referring...

...patient's heart is arrested. The bypass system preferably includes a pump, filter, bubble trap, **heat exchanger** and an oxygenator, however, the patient's own lungs may also be used to oxygenate...

7/5,K/8 **(Item 8 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

00477381 **Image available**
SYSTEM AND METHOD FOR GENERALIZED EXTRACORPOREAL SUPPORT
Patent Applicant/Assignee:
THEROX INC,
Inventor(s):
SPEARS J Richard,
FOERSTER Seth A,
GESSERT James A,
ZALESKY Paul J,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9908733 A1 19990225
Application: WO 98US16760 19980813 (PCT/WO US9816760)
Priority Application: US 97915532 19970815
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: A61M-001/36
Publication Language: English

English Abstract
A system (10) and method for increasing gas concentration in blood which has use a generalized extracorporeal system (10) and method to treat hypoxemic blood from a patient (24) by mixing the blood with an oxygen supersaturated solution to generate hyperoxemic blood to be infused back to the patient (24). The extracorporeal system (10) comprises an extracorporeal tubing (12) through which blood from the patient (24) is circulated, a blood pump (14) for withdrawing blood from and delivering blood to the patient (24), at least one channel (18) for delivering oxygen-supersaturated fluid and a mixing region (39) for introducing supersaturated fluid without bubble formation. By infusing the oxygen-supersaturated fluid into the hypoxemic or normoxemic blood from the patient (24), hyperoxemic blood is thereby produced. The hyperoxemic blood is then returned to a central vein, right heart or artery of the patient (24) with the blood pump (14) at approximately the same volume delivery rate as blood volume withdrawal rate.

Detailed Description
... extracorporeal blood is needed for an adult patient when using the conventional membrane oxygenator, a **heat exchanger** is usually necessary to maintain the temperature of the blood and a blood transfusion is...

...within the system and which does not require a high priming volume of blood, a **heat exchanger** or aggressive systemic anticoagulation therapy.

There remains a further need in the art for a...the patient.

The system and method of the present invention obviates the need for a **heat exchanger** and for an aggressive, systemic anticoagulation therapy due to the small blood priming volume and...of the relatively low 25 priming volume for extracorporeal system 10, the need for a **heat exchanger** and a blood

transfusion is obviated. In addition, the relatively small blood-to-tubing contact...may improve hemodynamics in a manner similar to that associated with diastolic augmentation from an **intraaortic** balloon **pump** , but the increase in 10 perfusion pressure would occur for the entire cardiac cycle.

7/5,K/9 (Item 9 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00306784 **Image available**
CONTROL OF LIFE SUPPORT SYSTEMS
Patent Applicant/Assignee:
UNIVERSITY OF MANITOBA,
MUTCH William Alan C,
LEFEVRE Gerald Robin,
Inventor(s):
MUTCH William Alan C,
LEFEVRE Gerald Robin,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9524936 A2 19950921
Application: WO 95CA144 19950315 (PCT/WO CA9500144)
Priority Application: GB 945002 19940315
Designated States: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NL NO NZ PL PT RO RU SD SE SI SK TJ TT UA US UZ VN KE MW SD SZ UG AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Main International Patent Class: A61M-001/10
International Patent Class: A61M-01:36; A61M-16:00
Publication Language: English

English Abstract
The flow of a biological fluid to an organ is computer-controlled so that the natural variation of such flow is simulated. Specifically described are control of a blood pump flow output during CPB to mimic normal pulsatile blood flow from the heart and control of a ventilator output to mimic normal breathing of healthy lungs. A pattern of variation over time of instantaneous flow of a biological fluid to an organ of a mammalian species is established, a variable control parameter for regulation of flow of the biological fluid to the organ is generated in accordance with the pattern, and the flow of biological fluid to the organ is controlled in accordance with the variable control parameter.

Detailed Description
... luid to any organ. For example, the principles of the invention may be used in **intra aortic** balloon **counterpulsation** (**IABC**) , the technique used to support patients,, usually following CPB, when they are unable to maintain...cooling o 28 C commenced immediately in both groups, Temperature was altered using a Travenol **heat exchanger** .

In both groups of animals, the mean cerebral perfusion pressure (CPP; MAP - mean CSFP) was...the 30 min time frame without exceeding a temperature gradient of 8*C between the **heat exchanger** and the nasopharyngeal measurement sites. The MAP remained stable over the two temperatures in both...

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Set     Items   Description
S1      40378   HEAT(2N)EXCHANG???
S2        277   IABC OR IABP OR (INTRAAORTIC OR INTRA()AORTIC)(2N)(PUMP???
                OR COUNTERPULS? OR COUNTER()PULS?)
S3       1308   SHIVER? OR ANTISHIVER? OR MEPERIDINE
S4       1542   HYPOTHERM? OR HYPO()THERM??
S5          9   S1 AND S2
S6          9   IDPAT (sorted in duplicate/non-duplicate order)
S7          9   IDPAT (primary/non-duplicate records only)
? show files
File 348:EUROPEAN PATENTS 1978-2003/Apr W04
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030508,UT=20030501
         (c) 2003 WIPO/Univentio
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Biblio NPL

7/5/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

01881848 INSPEC Abstract Number: A82062833, B82038518
Title: Apparatuses for extracorporeal and auxiliary circulation of blood
Author(s): Bobrov, B.C.; Frenkel, A.L.
Journal: Meditsinskaya Tekhnika vol.15, no.2 p.30-2
Publication Date: March-April 1981 Country of Publication: USSR
CODEN: MEDTBV ISSN: 0047-6617
Translated in: Biomedical Engineering vol.15, no.2 p.46-7
Publication Date: March-April 1981 Country of Publication: USA
CODEN: BIOEAF ISSN: 0006-3398
Abstract: The present-day extracorporeal (AEC) model differs from well-known apparatuses designed for the same purpose in that it has a device using electro cardiogram signals to automatically synchronize the work of a roller type arterial pump with the work of the patient's heart. The construction of the apparatus allows one not only to effect extracorporeal circulation of blood, but also to carry out intraoperative counterpulsation and auxiliary synchronized venoarterial perfusion with artificial gas exchange. The authors describe units of the physiologic block (oxygenator, **heat exchanger** , cardiotomy storage tank, and connecting elements) which complete the apparatus are disposable structural members, and are prepared from high-quality materials. Units produced by Soviet and non-Soviet firms including a disposable oxygenator, single-pass bubble oxygenators, disposable cardiotomy storage tanks and roller type pumps are described. A second type of AEC model contains a biocontrol system which provides for the coordinated work of the executive organ, the **intraaortic** balloon **pump** . (0 Refs)

7/5/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03962414 Genuine Article#: QV629 Number of References: 14
Title: EXTRACORPOREAL CARDIOPULMONARY LIFE-SUPPORT WITH HEPARIN-BONDED CIRCUITRY IN THE RESUSCITATION OF MASSIVELY INJURED TRAUMA PATIENTS
Author(s): PERCHINSKY MJ; LONG WB; HILL JG; PARSONS JA; BENNETT JB
Journal: AMERICAN JOURNAL OF SURGERY, 1995, V169, N5 (MAY), P488-491
ISSN: 0002-9610
Abstract: BACKGROUND: Patients who have massive but potentially survivable injuries frequently die from complications of hypovolemia, hypoxemia, hypothermia, metabolic acidosis, and coagulopathy. Emergency cardiopulmonary bypass has been unsuccessful in preventing such deaths because it involves systemic anticoagulation that exacerbates coagulopathy.

PATIENTS AND METHODS: A simplified extracorporeal cardiopulmonary life support (ECLS) system was assembled consisting of a centrifugal pump head, **heat exchanger** , membranous oxygenator, percutaneous cannulas, and heparin-bonded circuitry. The entire system has heparin-bonded surfaces. Patients were resuscitated with the system after femoral vein-femoral artery cannulation. ECLS was used to resuscitate massively injured patients who were deteriorating despite maximal conventional therapy.

RESULTS: While receiving maximal conventional therapy, 6 patients developed hypothermia, metabolic acidosis, and coagulopathy causing pulmonary hemorrhaging and hypoxemia from severe underlying lung injuries. ECLS with heparin-bonded circuitry provided cardiopulmonary support and rewarming while physicians addressed coagulopathies and surgical bleeding and assessed survivability. Three patients survived.

CONCLUSIONS: ECLS with heparin-bonded circuitry offers supplemental capability in the resuscitation and cardiopulmonary support of selected massively injured patients while their primary injuries are being evaluated and treated.

Research Fronts: 93-5946 001 (ACUTE MYOCARDIAL-INFARCTION; **INTRAAORTIC** BALLOON **COUNTERPULSATION** ; HIGH-RISK PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY)

93-6009 001 (END-POINT HEPARIN ATTACHMENT; CARDIOPULMONARY BYPASS; COMPLEMENT ACTIVATION; POLYSTYRENE SURFACES)

counterpulsation in cardiogenic shock: report of a co-operative clinical trial. N Engl J Med 1973...

...84

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01372924 SUPPLIER NUMBER: 12940302 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Nonpharmacologic management of cardiac arrest and cardiogenic shock. (Pathogenesis and Management of Cardiogenic Shock and Postoperative Shock)
Goldenberg, Irvin F.
Chest, v102, n5, p596S(21)
Nov,1992
PUBLICATION FORMAT: Magazine/Journal ISSN: 0012-3692 LANGUAGE: English

... each device can provide.

Hemodynamic indications for mechanical circulatory support beyond the use of the **intra - aortic** balloon **pump** (**IABP**) for patients with cardiogenic shock have often been based on the suggestions of Norman and... and LVAD only; for right ventricular failure a right ventricular assist device (RVAD) and an **IABP** . If both ventricles were contracting poorly and both right and left artial pressure were greater...

...consists of a venous and arterial cannula, a membrane oxygenator, a blood pump, and a **heat exchanger** .[54] The venous cannula is inserted into the femoral vein and advanced to the inferior...rapid application and does not require anticoagulation therapy.

External Centrifugal and Roller Pumps

After the **IABP** , the centrifugal and roller pumps are the next most used mechanical assist device.[67,76...

...23] Norman JC, Cooley DA, Igo SR, et al. Prognostic indices for survival during postcardiotomy **intra - aortic** balloon **pumping** . J Thorac Cardiovasc Surg 1977; 74:709-20

[24] Parascandola SA, Pae WE, Davis PK...

...26] Bolooki H. Methods of insertion of intra-aortic balloon catheter. In: Clinical applications of **intra - aortic** balloon **pump** : 2nd ed. Mount Kisco: Futura, 1984; 103:26

[27] McBride LR, Miller LW, Naunheim KS, et al. Axillary artery insertion of an **intraaortic** balloon **pump** . Ann Thorac Surg 1989; 48:874-75

[28] Reedy JE, Ruzevich SA, Noedel NR, et...

...1990; 9:97-105

[29] Bolooki H. Physiology of balloon pumping. In: Clinical applications of **intra - aortic** balloon **pump** . 2nd ed. Mount Kisco: Futura, 1984; 57-90

[30] Weber KT, Janicki JS. **Intraaortic** balloon **counterpulsation** : a review of physiological principles, clinical results, and device safety. Ann Thorac Surg 1974; 17...

...31] Mueller H, Ayres SM, Giannelli S, et al. Effect of isoproterenol, l-norepinephrine, and **intraaortic counterpulsation** on hemodynamics and myocardial metabolism in shock following acute myocardial infarction. Circulation 1972; 45:335

[32] Williams DO, Korr KS, Gerwirtz H, et al. The effect of **intraaortic** balloon **counterpulsation** on regional myocardial blood flow and oxygen consumption in the presence of coronary artery stenosis...

...unstable angina. Circulation 1982; 66:593

[33] Scheidt S, Wilner G, Mueller H, et al. **Intra - aortic** balloon

```
Set      Items   Description
S1      101117   HEAT(2N)EXCHANG???
S2       22202   IABC OR IABP OR (INTRAAORTIC OR INTRA()AORTIC)(2N)(PUMP???
             OR COUNTERPULS? OR COUNTER()PULS?)
S3       22089   SHIVER? OR ANTISHIVER? OR MEPERIDINE
S4      102878   HYPOTHERM? OR HYPO()THERM??
S5           2   S1 AND S2
S6           2   S5 NOT PY>2001
S7           2   RD (unique items)
? show files
File   2:INSPEC 1969-2003/May W1
         (c) 2003 Institution of Electrical Engineers
File   5:Biosis Previews(R) 1969-2003/May W2
         (c) 2003 BIOSIS
File   6:NTIS 1964-2003/May W2
         (c) 2003 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1970-2003/May W1
         (c) 2003 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2003/May W1
         (c) 2003 Inst for Sci Info
File  35:Dissertation Abs Online 1861-2003/Apr
         (c) 2003 ProQuest Info&Learning
File  65:Inside Conferences 1993-2003/May W1
         (c) 2003 BLDSC all rts. reserv.
File  73:EMBASE 1974-2003/Apr W4
         (c) 2003 Elsevier Science B.V.
File  94:JICST-EPlus 1985-2003/May W1
         (c)2003 Japan Science and Tech Corp(JST)
File 144:Pascal 1973-2003/May W1
         (c) 2003 INIST/CNRS
File 155:MEDLINE(R) 1966-2003/May W1
         (c) format only 2003 The Dialog Corp.
File 172:EMBASE Alert 2003/May W2
         (c) 2003 Elsevier Science B.V.
File 198:Health Devices Alerts(R) 1977-2003/May W2
         (c) 2003 ECRI-nonprft agncy
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  48:SPORTDiscus 1962-2003/May
         (c) 2003 Sport Information Resource Centre
File  71:ELSEVIER BIOBASE 1994-2003/May W2
         (c) 2003  Elsevier Science B.V.
File  91:MANTIS(TM) 1880-2002/Oct
         2002 (c) Action Potential
File 162:Global Health 1983-2003/Apr
         (c) 2003 CAB International
File 164:Allied & Complementary Medicine 1984-2003/May
          (c) 2003 BLHCIS
File 467:ExtraMED(tm) 2000/Dec
         (c) 2001 Informania Ltd.
```

FT NPL

7/3,K/1 (Item 1 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2003 The Gale Group. All rts. reserv.

01820606 SUPPLIER NUMBER: 53980262 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Epidemiology of Nosocomial Pneumonia(*).
Craven, Donald E.; Steger, Kathleen A.
Chest, 108, 2, 1S(1)
August,1995
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0012-3692

7/3,K/2 (Item 2 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2003 The Gale Group. All rts. reserv.

01798877 SUPPLIER NUMBER: 19636210 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Early vs conventional extubation after cardiac surgery with cardiopulmonary bypass.
Reyes, Antonio; Vega, Gema; Blancas, Rafael; Morato, Begona; Moreno, Jose-Luis; Torrecilla, Carmen; Cereijo, Enrique
Chest, v112, n1, p193(9)
July,1997
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0012-3692

7/3,K/3 (Item 3 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2003 The Gale Group. All rts. reserv.

01745147 SUPPLIER NUMBER: 20202609 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Percutaneous cardiopulmonary support for high-risk angioplasty.(Advances in Cardiovascular Interventions)
Dukovcic, Amy L.; Daleiden-Burns, Anne; Shawl, Fayaz A.
Critical Care Nursing Quarterly, v20, n4, p16(13)
Feb,1998
PUBLICATION FORMAT: Magazine/Journal ISSN: 0887-9303 LANGUAGE: English

... inflation occurring during the angioplasty procedure without hemodynamic and/or mechanical support (eg, inotropic medications, **intraaortic** balloon **pump**). Despite the assistance these methods provide, patients undergoing angioplasty with an ejection fraction less than...

...aspirated.from the right atrium and vena cava, drained through a venous cannula into a **heat exchanger** , and pumped into the central core of a hollow fiber membrane oxygenator, then returned to...the right atrium and vena cave into the venous cannula and then pumped through a **heat exchanger** and oxygenator and returned via the arterial cannula. PCPS flow rates are initiated at 2...time for elective, high-risk PTCA is 37 minutes.(16) A patient may also require **intraaortic** balloon **pump** insertion as a transition if weaning from PCPS is unsuccessful.
Autologous blood from a cell...

7/3,K/4 (Item 4 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2003 The Gale Group. All rts. reserv.

[52] Reemstsma K, Drusin R...shock. Lancet 1974; 2:1342-45

[119] Willerson JT, Carry GC, Watson JT, et al. **Intra - aortic** balloon **counterpulsation** in patients in cardiogenic shock, medically refractory left ventricular failure, and/or recurrent ventricular tachycardia...

...SA, Scanlon PJ, Loeb HS, et al. Treatment of cardiogenic shock in myocardial infarction by **intra - aortic** balloon **counterpulsation** and surgery. Am J Med 1977; 62:687-92

[121] Ehrich DA, Biddle TL, Kronenberg MW, et al. The hemodynamic response to **intra - aortic** balloon **counterpulsation** in patients with cardiogenic shock complicating acute myocardial infarction. Am Heart J 1977; 93:274-79

[122] Bardet J, Masquet C, Kahn JC, et al. Clinical and hemodynamic results of **intra - aortic** balloon **counterpulsation** and surgery for cardiogenic shock. Am Heart J 1977; 93:280-88

[123] O'Rourke...Zellgitt SL, Trono R, et al. Retrospective analyses of the need for mechanical circulatory support (**intra - aortic** balloon **pump** /abdominal left ventricular assist device or partial artificial heart) after cardiopulmonary bypass: a 44 month...

7/3,K/5 (Item 5 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01369200 SUPPLIER NUMBER: 12604338 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Cardiac resuscitation with percutaneous cardiopulmonary support.
Rees, M.R.; Browne, T.; Sivananthan, U.M.; Whittaker, S.; Hick, D.; Verma, S.P.; Tan, L.B.; Davies, G.A.
The Lancet, v340, n8818, p513(2)
August 29,1992
PUBLICATION FORMAT: Magazine/Journal ISSN: 0099-5355 LANGUAGE: English

... the inferior vena cava and the right atrium. The extracorporeal circulation was connected to a **heat exchanger** , a membrane oxygenator, and a vortex pump, all of which were mounted on a portable...

...of the operation despite maximum inotropic support. Electrocardiography suggested a diagnosis of perioperative myocardial infarction. **Intra - aortic** balloon **pumping** could only achieve a systolic blood pressure of 60 mm Hg. Percutaneous CPS was initiated...

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Set     Items   Description
S1      14096   HEAT(2N)EXCHANG???
S2        663   IABC OR IABP OR (INTRAAORTIC OR INTRA()AORTIC)(2N)(PUMP???
                 OR COUNTERPULS? OR COUNTER()PULS?)
S3       2578   SHIVER? OR ANTISHIVER? OR MEPERIDINE
S4       3567   HYPOTHERM? OR HYPO()THERM??
S5          5   S1 AND S2
S6          5   RD (unique items)
S7          5   S6 NOT PY>2001
S8          2   S7 AND (S4 OR S3)
? show files
File 441:ESPICOM Pharm&Med DEVICE NEWS 2003/May W2
         (c) 2003 ESPICOM Bus.Intell.
File 442:AMA  Journals 1982-2003/Sep B2
         (c)2003 Amer Med Assn -FARS/DARS apply
File 444:New England Journal of Med. 1985-2003/May W3
         (c) 2003 Mass. Med. Soc.
File  95:TEME-Technology & Management 1989-2003/Apr W4
         (c) 2003 FIZ TECHNIK
File  98:General Sci Abs/Full-Text 1984-2003/Mar
         (c) 2003 The HW Wilson Co.
File 135:NewsRx Weekly Reports 1995-2003/May W1
         (c) 2003 NewsRx
File 149:TGG Health&Wellness DB(SM) 1976-2003/May W1
         (c) 2003 The Gale Group
File 369:New Scientist 1994-2003/Apr W4
         (c) 2003 Reed Business Information Ltd.
File 370:Science 1996-1999/Jul W3
         (c) 1999 AAAS
```

FT Patents 5

8/5,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01233158
Catheter and method of manufacturing the same
PATENT ASSIGNEE:
TERUMO KABUSHIKI KAISHA, (200694), 44-1, Hatagaya 2-chome, Shibuya-ku, Tokyo, (JP), (Applicant designated States: all)
INVENTOR:
Itou, Takenari, c/o Terumo Kabushiki Kaisha, 150, Maimaigicho, Fujinomiya-shi, Shizuoka-ken, (JP)
Mihara, Nobuaki, c/o Terumo Kabushiki Kaisha, 150, Maimaigicho, Fujinomiya-shi, Shizuoka-ken, (JP)
LEGAL REPRESENTATIVE:
Casalonga, Axel et al (14511), BUREAU D.A. CASALONGA - JOSSE Morassistrasse 8, 80469 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 1068876 A2 010117 (Basic)
EP 1068876 A3 010530
APPLICATION (CC, No, Date): EP 2000114173 000712;
PRIORITY (CC, No, Date): JP 99202607 990716
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: **A61M-025/00**

ABSTRACT EP 1068876 A2
A first linear member (51) made of a first resin material having a relatively high rigidity is wound in a dense spiral in a first region (221) and in a sparse spiral in a second region (223) of a base tube (4) for a catheter (1), and a second linear member (52) made of a second resin material having a relatively low rigidity is wound in a sparse spiral in the first region (221) and in a dense spiral in the second region (223) of the base tube (4). Then, the first linear member (51) and the second linear member (52) are melted by heating, followed by solidifying the molten materials, thereby forming a catheter (1) excellent in pushability, torque transmitting capability, following capability, kink resistance and safety.
ABSTRACT WORD COUNT: 129
NOTE: Figure number on first page: 5

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 010117 A2 Published application without search report
Search Report: 010530 A3 Separate publication of the search report
Examination: 011114 A2 Date of request for examination: 20010921
LANGUAGE (Publication,Procedural,Application): English; English; English

...SPECIFICATION wound state, to be thermally melted to achieve mixing or fusing, followed by solidifying by **cooling** to form a resin layer. If the first linear member 51 and the second linear...the base tube 4 are melted by heating. When the molten materials are solidified by **cooling** , the flat resin layer 5 is formed on the outer surface of the base tube...

...various balloon catheters for percutaneous transluminal coronary angioplasty (PTCA), for percutaneous transluminal angioplasty (PTA), for **IABP** , etc., an ultrasonic catheter, an atelectomy catheter, a catheter for an endoscope, an indwelling catheter...

8/5,K/2 **(Item 2 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00595976
Multi purpose perfusion cannula
PATENT ASSIGNEE:
Gabbay, Shlomo, (886350), 1 Randall Drive, Short Hills New Jersey 07078, (US), (Proprietor designated states: all)
INVENTOR:
Gabbay, Shlomo, 1 Randall Drive, Short Hills New Jersey 07078, (US)
LEGAL REPRESENTATIVE:
Eddowes, Simon et al (87482), Urquhart-Dykes & Lord, 30 Welbeck Street, London W1G 8ER, (GB)
PATENT (CC, No, Kind, Date): EP 604803 A2 940706 (Basic)
EP 604803 A3 940928
EP 604803 B1 020227
APPLICATION (CC, No, Date): EP 93119918 931210;
PRIORITY (CC, No, Date): US 992116 921217
DESIGNATED STATES: DE; ES; FR; GB; IT
INTERNATIONAL PATENT CLASS: **A61M-001/10**
CITED PATENTS (EP B): EP 194338 A; EP 286756 A; WO 90/13322 A; US 4287892 A ; US 4569332 A

ABSTRACT EP 604803 A2
A cannula is provided particularly for use in connection with aortic perfusion. In its simplest form, it comprises a perfusion cannula with a main channel which is fluidly connected at one end to an intra-aortic portion of the cannula and, at the other end, is fluidly connected to the aortic perfusion line of a cardiopulmonary bypass. A first side port is adapted for fluid connection to an extra-aortic pump or to an **intra - aortic** balloon **pump** . The other end of the first port is in fluid connection with the intra-aortic portion of the cannula. This arrangement permits the insertion of the **intra - aortic** balloon **pump** through the first port, into the intra-aortic portion of the cannula, and beyond into the descending aorta. A blood pressure port is fluidly connected to a blood pressure monitoring tube said tube is located within the intra-aortic portion and extends therein to a pressure point upstream of the distal end of the portion. The other end of the tube is adapted for connection to a blood pressure measuring or monitoring device. (see image in original document)
ABSTRACT WORD COUNT: 181
NOTE: Figure number on first page: 9
LEGAL STATUS (Type, Pub Date, Kind, Text):

Change:	010829 A2	Designated contracting states changed 20010711
Application:	940706 A2	Published application (A1with Search Report ;A2without Search Report)
Oppn None:	030219 B1	No opposition filed: 20021128
Change:	010905 A2	Legal representative(s) changed 20010718
Grant:	020227 B1	Granted patent
Change:	940914 A2	International patent classification (change)
Change:	940914 A2	Obligatory supplementary classification (change)
Search Report:	940928 A3	Separate publication of the European or International search report
Examination:	950816 A2	Date of filing of request for examination:

950616
Examination: 961030 A2 Date of despatch of first examination report: 960916
Change: 990428 A2 Representative (change)
Change: 990811 A2 Legal representative(s) changed 19990622
LANGUAGE (Publication,Procedural,Application): English; English; English

...SPECIFICATION factor. A vicious cycle is created and must be treated immediately by insertion of an **Intra - Aortic** Balloon **Pump** (**IABP**), drugs, or even the insertion of an additional graft, taken from the saphenous vein, into...

...direct result of certain mechanisms; specifically, cross clamping of the ascending aorta to isolate and **cool** the heart for the surgery. Another cause is the jet of blood exiting from the...

...formation of calcium embolisms, a major cause of stroke. The device eliminates the need to **cool** the patient to extreme low temperatures, nor is it necessary to perform the operation with...

...synchronism therewith. Since the extra-aortic pump displaces a much greater volume than does the **IABP** , because it is close to the coronary arteries, it is necessary to remove the plug...

8/5,K/3 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00951651 **Image available**
PARTIAL AORTIC OCCLUSION DEVICES AND METHODS FOR CEREBRAL PERFUSION AUGMENTATION
Patent Applicant/Assignee:
COAXIA INC, 10900 73rd Avenue North, Suite 102, Maple Grove, MN 55369-5400, US, US (Residence), US (Nationality)
Inventor(s):
BARBUT Denise R, 70 East 77th Street, New York, NY 10021, US,
KEITH Peter T, 1477 Grantham, St. Paul, MN 55108, US,
BERHOW Steven W, 9177 13th Street N.E., St. Michael, MN 55376, US,
ST GERMAIN Jon P, 18890 146th Avenue, Elk River, MN 55330, US,
Legal Representative:
KAPPOS John C (agent), Lyon & Lyon LLP, 633 West Fifth Street, Suite 4700, Los Angeles, CA 90071-2066, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200285443 A1 20021031 (WO 0285443)
Application: WO 2002US12582 20020419 (PCT/WO US0212582)
Priority Application: US 2001841929 20010424
Designated States: CA JP
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
Main International Patent Class: **A61M-029/00**
Publication Language: English
Filing Language: English

English Abstract
Methods are provided for partial aortic obstruction for cerebral perfusion augmentation in patients suffering from global or focal

cerebral ischemia. Alternatively, the methods can be used to partially obstruct aortic blood flow to condition the spinal cord to secrete neuroprotective agents prior to abdominal aortic aneurysm repair. Partial obstruction of a vessel can be accomplished by a device comprising an elongate catheter (102) and a distally mounted expandable member (104).The expandable member (104) may comprise one or two balloons. Other medical devices, such as an angioplasty, stent, or atherectomy catheter, can be inserted distal the expandable member to provide therapeutic intervention.

Legal Status (Type, Date, Text)
Publication 20021031 A1 With international search report.
Examination 20030220 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
... consists of cardiovascular support with the combination of inotropic agents such as dopamine, dobutamine, and **intra - aortic** balloon **counterpulsation** . Treatment of hemorrhagic shock consists of volume replacement 1 5 and hemostasis. When these measures...second lumen for passage of other medical devices. Devices, such as an infusion, atherectomy, angioplasty, **hypothermia** catheters or devices (selective cerebral **hypothermia** with or without systemic hypotherima, and typically **hypothermia** will be combined with measures to increase perfusion to overcome the decreased cerebral blood flow caused by the hypotherrnia, such that **hypothermia** and coarctation are complimentary), or electrophysiologic study (EPS) catheter, can be introduced through the constrictor to insert in the vessel to provide therapeutic interventions at any site rostrally. Where cerebral **cooling** is desired in combination with coarctation, a **cooling** wire can be I 0 introduced through the constrictor to insert into a desired vessel. Alternatively, **cooling** catheter devices can be inserted through the constrictor to infuse **cool** blood selectively into one side of ...6,146,370, all incorporated herein by reference in their entirety, can be used for **cooling** or other procedures.

In another embodiment, the expandable constrictor comprises an outer conical shell and ...devices, e.g., micro-infusion catheters, pressure wires, stent catheters, angioplasty catheters, atherectomy devices, pharmaceuticals, **cooling** mechanisms, and alike. Distal end 172 is sufficiently long to reach the vessels of the...thus repeated inflations WO 02/085443 PCT/US02/12582 more than SBP increases for **IABP** . Second, **IABP** increases DBP but not SBP, and **IABP** pulls blood from the brain during systole. By contrast, ligation increases both DBP and SBP...

8/5,K/4 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00890494 **Image available**
HEART ASSIST DEVICES, SYSTEMS AND METHODS
Patent Applicant/Assignee:
SUNSHINE HEART COMPANY PTY LTD, 2A River Street, Birchgrove, NSW 2041, AU , AU (Residence), AU (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
PETERS William Suttle, 93 Bassett Road, Remuera, Auckland 1005, NZ, NZ

(Residence), NZ (Nationality), (Designated only for: US)
MARSH Peter Crispin Lawrence, 82 Louisa Road, Birchgrove, NSW 2041, AU, AU (Residence), AU (Nationality), (Designated only for: US)
WHITE Geoffrey Hamilton, 22 Nicholson Street, East Balmain, NSW 2041, AU, AU (Residence), AU (Nationality), (Designated only for: US)
HENRICHSEN Hans Hansforth, 5 Smith Close, Shalvey, NSW 2770, AU, AU (Residence), AU (Nationality), (Designated only for: US)
SNOW David, 4 Forest Drive, Bedford, NH 03110, US, US (Residence), US (Nationality), (Designated only for: US)

Legal Representative:
SPRUSON & FERGUSON (agent), GPO Box 3898, Sydney, NSW 2001, AU,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200224255 A1 20020328 (WO 0224255)
Application: WO 2001AU1187 20010921 (PCT/WO AU0101187)
Priority Application: AU 2000312 20000922

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: **A61M-001/12**
Publication Language: English
Filing Language: English

English Abstract
An implantable device (10) for assisting the functioning of the heart of a patient. The device (10) includes compressing means (14) adapted to be positioned about the aorta (12) of a patient for externally engaging and compressing the aorta (12) and means (30) for releasing the compressing means (14) from about the aorta (12). The releasing means (30) being adapted for releasing in response to intracorporeal input during minimally invasive surgery or in response to extracorporeal input. The device (10) is connectable to motive means adapted to activate the compressing means (14). The compressing means (14) and the releasing means (30) are fully implantable within the thoracic cavity of the patient.

Legal Status (Type, Date, Text)
Publication 20020328 A1 With international search report.
Examination 20020510 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
... relates generally to counterpulsation heart assist devices, systems and methods.

...a small lumen vessel -vessel size is an independent risk factor for limb ischemia using **IABP** . Patient ambulation is also possible.

Additionally, the implantation technique used for the device of the... shape plastic, and when it is desired to remove the wrap it is heated or **cooled** slightly to cause it to shrink into a more compact form.

The means to secure...to record the ECG.. Ali example of a suitable motive

means is the Datascope 97 **IABP** console or the Arrow ACAT console. The cuff may also have holes or slits to...counterpulsation with the heart by the gas line 16 being connected to an external portable **IABP** console, for example that known as the Datascope 97 (Datascope is a registered trade mark...risk of leg ischaemia. If conliected to a fixed motive means (eg. the Datascope 97 **IABP** console) then the patient's mobility is limited by the percutaneous line. However, this limitation...

8/5,K/5 (Item 3 from file: 349)

00843414 **Image available**

INTRA-AORTIC BALLOON CATHETER HAVING AN ULTRA-THIN STRETCH BLOW MOLDED BALLOON MEMBRANE

Patent Applicant/Assignee:
DATASCOPE INVESTMENT CORP, 14 Philips Parkway, Montvale, NJ 07645, US, US (Residence), US (Nationality)
Inventor(s):
LAKSIN Olga, 2278 Redwood Road, Scotch Plains, NJ 07076, US,
Legal Representative:
RONAI Abraham (agent), Datascope Corp., 14 Philips Parkway, Montvale, NJ 07645, US,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200176674 A1 20011018 (WO 0176674)
Application: WO 2000US9474 20000407 (PCT/WO US0009474)
Priority Application: WO 2000US9474 20000407
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **A61M-025/00**
International Patent Class: **A61M-001/10** ; A61L-029/06
Publication Language: English
Filing Language: English

English Abstract
An intra-aortic balloon catheter (30) having an ultra-thin stretch blow molded balloon membrane (36). The balloon membrane (36). he balloon membrane is made from thermoplastic elastomeric and/or semicrystalline materials such as but not limited to polyurethane and polyetheramid.

Legal Status (Type, Date, Text)
Publication 20011018 A1 With international search report.
Examination 20011206 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
... their microstructure during the initial stretching step of the tube and asa result of quickly **cooling** the tube to a temperature below the crystallization temperature of the tube material. Crystallization of...

...present invention have discovered a means to create a balloon membrane strong enough to endure **intra - aortic** balloon **pumping** therapy without creating crystallization microstructure, which they have discovered, is detrimental to the abrasion resistance...proximal end 18 of the gas passageway or lumen 3 may be connected to an **intra - aortic** balloon **pump** ...

8/5,K/6 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00740151 **Image available**
INTRA - AORTIC **BALLOON** PUMP **SYSTEM WITH ASSOCIATED STENT AND METHOD FOR USING SAME**
Patent Applicant/Assignee:
ABIOMED INC, 22 Cherry Hill Drive, Danvers, MA 01923, US, US (Residence), US (Nationality)
Inventor(s):
LEDERMAN David M, 8 Ida Road, Marblehead, MA 01945, US
Legal Representative:
CAHILL Ronald E, Nutter, McClennen & Fish, LLP, One International Place, Boston, MA 02110, US
Patent and Priority Information (Country, Number, Date):
Patent: WO 200053240 A1 20000914 (WO 0053240)
Application: WO 2000US6161 20000309 (PCT/WO US0006161)
Priority Application: US 99264943 19990309
Designated States: CA IL JP
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: **A61M-001/10**
Publication Language: English
Filing Language: English

English Abstract
A balloon pump system (100) including catheter-mounted pumping balloon (106) configured to be positioned within a desired body passageway to pump a fluid through the body passageway. A stent (104) is percutaneously deployed within the body passageway. The pumping balloon (106) is percutaneously deployed within the stent (104) such that the stent (104) is interposed between the pumping balloon (106) and the walls of the body passageway. The stent (104) substantially limits the compliance of the body passageway, preventing the passageway in the vicinity of the pumping balloon (106) from significantly expanding or contracting in response to forces generated by inflation and deflation of the pumping balloon (106). As a result, a volume of fluid substantially equivalent to a change in volume of the pumping balloon (106) is displaced when the pumping balloon (106) is inflated or deflated.

Legal Status (Type, Date, Text)
Publication 20000914 A1 With international search report.
Examination 20001109 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
BACKGROUND OF THE INVENTION
Field of...the shape-memory materials can be alloyed for later removal by intraluminal catheter flush with **cooled** saline to induce reversion to a

reduced profile at martensitic phase for ease of withdrawal...

8/5,K/7 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00738571 **Image available**
PARTIAL AORTIC OCCLUSION DEVICES AND METHODS FOR CEREBRAL PERFUSION AUGMENTATION

Patent Applicant/Assignee:
COAXIA INC, 70 East 77th Street, New York, NY 10021-1181, US, US (Residence), US (Nationality)
Inventor(s):
BARBUT Denise, 70 East 77th Street, New York, NY 10021, US
Legal Representative:
KAPPOS John C, Lyon & Lyon LLP, 633 West Fifth Street, Suite 4700, Los Angeles, CA 90071-2066, US

Patent and Priority Information (Country, Number, Date):
Patent: WO 200051675 A1 20000908 (WO 0051675)
Application: WO 2000US5005 20000225 (PCT/WO US0005005)
Priority Application: US 99260371 19990301
Designated States: CA JP
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: **A61M-031/00**
Publication Language: English
Filing Language: English

6,231,551

English Abstract
Methods are provided for partial aortic occlusion for cerebral perfusion augmentation in patients suffering from global or focal cerebral ischemia. Alternatively, the methods can be used to partially occlude aortic blood flow to condition the spinal cord to secrete neuro-protective agents prior to abdominal aortic aneurysm repair. Partial occlusion of a vessel can be accomplished by a device comprising an elongate catheter (102), a distally mounted expandable occludent (104), a variable flow mechanism, and a manometer (112). The occludent (104) may comprise two conical shells (118, 136) or an inflatable ring-shaped balloon (130) disposed about a cylindrical sleeve. Other medical devices, such as an atherectomy catheter, can be inserted distal the occludent to provide therapeutic intervention.

Legal Status (Type, Date, Text)
Publication 20000908 A1 With international search report.
Examination 20001207 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
... consists of cardiovascular support with the combination of inotropic agents such as dopamine, dobutamine, and **intra - aortic** balloon **counterpulsation** . Treatment of hemorrhagic shock consists of volume replacement and hemostasis. When these measures fail, supracoeceliac... hypothen-nia catheters or devices (selective cerebral hypothennia with or without systemic hypothennia, and typically **hypothermia** will be combined with measures to increase perfusion to overcome the decreased cerebral blood flow caused by the **hypothermia** , such that hypothennia and coarctation are complimentary), or electrophysiologic study (EPS) catheter, can be

introduced...cerebral vasoconstrictor.

This example further explains the important differences between coarctation as described herein versus **IABP** . First, SBP increases when the aorta is constricted using coarctation much more than SBP increases for **IABP** . Second, **IABP** increases DBP but not SBP, and **IABP** pulls blood from the brain during systole. By contrast, coarctation increases both DBP and SBP...

8/5,K/8 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00578389 **Image available**
A MEDICAL DEVICE FOR REMOVING THROMBOEMBOLIC MATERIAL FROM CEREBRAL ARTERIES AND METHODS OF USE
Patent Applicant/Assignee:
COAXIA INC,
Inventor(s):
BARBUT Denise,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200041762 A1 20000720 (WO 0041762)
Application: WO 2000US420 20000106 (PCT/WO US0000420)
Priority Application: US 99228718 19990112
Designated States: CA JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: **A61M-029/00**
Publication Language: English

English Abstract
A medical device having an elongate catheter (1), a balloon occluder (12) mounted on a distal end (2) of the catheter (1), and optionally a chopping mechanism (7) associated with an aspiration port (6) of the catheter (1). Continuous or intermittent suction can be applied to the aspiration port (6) which is distal to the occluder (12) to dislodge thromboembolic material in a carotid or cerebral artery. Oxygenated blood or other fluid, which may be **hypothermic** , can be perfused through at least one perfusion port (25) proximal to the occluder to maintain and augment perfusion of the collateral vasculature proximal to the occlusive lesion. The flow rate of blood or fluid can be controlled by rotating two cylindrical members. Neuroprotective agents or t-PA can also be infused distal to the occluder through the aspiration port (6) or an infusing port. Methods of using the devices in treating patients with acute stroke or occlusive cerebrovascular disease are also disclosed.

Detailed Description
... proximal to the offending lesion. The I 0 device may employ a chopping mechanism, vasodilator, **hypothermic** perfiision or local administration of t-PA and optionally an extracorporeal pumping mechanism to remove... The occlusion is removed from the artery by removing the catheter under continuous suction. Focal **hypothermia** , which has been shown to be neuroprotective, can be administered by perfusing hypothennic oxygenated blood...

...inflated to create alternating negative and positive pressure within the closed chamber, similar to an **intra - aortic** balloon **pump** (**IABP**), to facilitate dislodgment of the occlusion.

If suction fails to dislodge the occlusion, a thrombolytic...

8/5,K/9 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00564088 **Image available**
INTRA-AORTIC BALLOON CATHETER HAVING AN ULTRA-THIN STRETCH BLOW MOLDED BALLOON MEMBRANE
Patent Applicant/Assignee:
DATASCOPE INVESTMENT CORP,
Inventor(s):
LAKSIN Olga,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200027461 A1 20000518 (WO 0027461)
Application: WO 99US26185 19991104 (PCT/WO US9926185)
Priority Application: US 98188602 19981109
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: **A61M-025/00**
International Patent Class: A61L-029/00; B29C-049/00
Publication Language: English

English Abstract
An intra-aortic balloon catheter (30) having an ultra-thin stretch blow molded balloon membrane (36). The balloon membrane is made from thermoplastic elastomeric and/or semicrystalline materials such as but not limited to polyurethane and polyetheramid.

Detailed Description
... proximal end 18 of the gas passageway or lumen 3 may be connected to an **intra - aortic** balloon **pump** .

The present invention comprises an intra-aortic balloon catheter having an ultra-thin stretch blow...a pressure of 30-40 psi in the tube 46. The final step involves quickly **cooling** the ballooned tube 46 while maintaining a pressure of approximately 80 psi in the tube...

8/5,K/10 (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00307408 **Image available**
INTRA-AORTIC BALLOON CATHETERS
CATHETERS A BALLONNETS INTRA-AORTIQUES
Patent Applicant/Assignee:
ST JUDE MEDICAL INC,
Inventor(s):
ANDREWS Robert R,
EDELMAN William,

LEVENDUSKY Joseph A,
O'BRIEN Robert L,
MAJESKI Peter T,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9525560 A1 19950928
Application: WO 95US3464 19950320 (PCT/WO US9503464)
Priority Application: US 94210611 19940318
Designated States: CA JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: **A61M-029/00**
International Patent Class: A61N-01:362; B29C-39:02
Publication Language: English

English Abstract
An **intra - aortic** balloon **pump** catheter includes an inner lumen (14) formed by a thin walled super-elastic metal alloy tube, namely of nitinol, with an inside diameter sufficient for a guide wire (28) and a small outside diameter which allows reduction of the outer lumen and related components by at least one size French while providing gas shuttle capacity between the lumens for conventional **intra - aortic** balloon **pump** operation. The outer lumen (12) is a tube formed of co-extruded plastics to enhance the size reduction and capacity goals, with an inner nylon portion (12b) for strength and relatively thin polyurethane outer portion (12a) for bio-compatibility, flexibility and compatibility for bonding to a thin polyurethane balloon (18). The proximal end sleeve of the balloon is stretched and then stress relieved by heating with an internal heater on a mounting mandrel (70) to effect a desired small diameter sizing. A radiopaque metal marker ring (94) of nitinol also is provided to improve imaging capabilities while being compatible with the lumen materials.

Detailed Description
FIELD OF THE INVENTION
This invention relates to **intra - aortic** balloon **pumps** and particularly to improved **intra - aortic** balloon **pump** catheters.

Following heating and subsequent **cooling** , the clamp 74 is opened and the collet 72 released, and the balloon is removed...such balloons, by a factor of more than three.

8/5,K/11 (Item 9 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00299068 **Image available**
INTRA - AORTIC **BALLOON** PUMP **DEVICE**
Patent Applicant/Assignee:
ST JUDE MEDICAL INC,
Inventor(s):
EDELMAN William,
KIERAS Mark Thomas,
MAJESKI Peter T,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9517219 A1 19950629
Application: WO 94US14721 19941219 (PCT/WO US9414721)
Priority Application: US 93513 19931220

Designated States: CA JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: **A61M-005/32**
International Patent Class: **A61M-25:00** ; **A61M-29:00** ; A01N-01:02
Publication Language: English

English Abstract
A large thin walled polyurethane balloon (20) for an **intra - aortic** balloon **pump** catheter (10) is coated with a hydrophilic lubricous coating (36) which includes a water-soluble polyvinyl pyrrolidone, preferably in a blend with a thermoplastic polyurethane, and a suitable organic solvent and then is dried and cured for a substantial period. The dried and cured balloon (20) is assembled into a catheter (10) and furled. The furled balloon (20f) demonstrates a high degree of slipperiness when hydrated in conjuction with insertion into a patient's vasculature, unfurls readily, and demonstrates flexibility, strength and toughness for use in intra-aortic pulsation operation.

Detailed Description
BACKGROUND OF THE INVENTION
Intra - aortic balloon **pumps** (**IABP**) are used to provide counter pulsation within the aorta of ailing hearts over substantial periods...

...that the furled balloon typically represents the largest diameter portion of the catheter of an **intra - aortic** balloon **pump** . Therefore, maximizing the slipperiness as well as minimizing the effective outside diameter of the furled...for 60 minutes. Upon removal from the oven the racks of balloons are allowed to **cool** under ambient room temperature conditions for a minimum of ten minutes, The balloons then are...lubricity and inert characteristics despite reasonable wear during extended periods of use normally encountered with **IABP** devices. Also, the coating does not present a hazard to effective assembly of the complete...

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Set     Items   Description
S1        277   IABC OR IABP OR (INTRAAORTIC OR INTRA()AORTIC)(2N)(PUMP???
            OR COUNTERPULS? OR COUNTER()PULS?)
S2     291530   COOL??? OR HYPOTHERM? OR HYPO()THERM??
S3         87   S1 AND S2
S4         63   S3 NOT IC=(C07C OR C07K)
S5         16   S4 AND IC=A61M
S6         16   IDPAT (sorted in duplicate/non-duplicate order)
S7         16   IDPAT (primary/non-duplicate records only)
S8         11   S7 NOT HEAT(2N)EXCHANGE??
? show files
File 348:EUROPEAN PATENTS 1978-2003/Apr W04
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030508,UT=20030501
         (c) 2003 WIPO/Univentio
```

FTNA

7/3,K/1 (Item 1 from file: 442)
DIALOG(R)File 442:AMA Journals

00107198

Subclinical Cerebral Complications After Coronary Artery Bypass Grafting Prospective Analysis With Magnetic Resonance Imaging, Quantitative Electroencephalography, and Neuropsychological Assessment (ARTICLE)

VANNINEN, RITVA; AIKIA, MARJA; KONONEN, MERVI; PARTANEN, KAARINA; TULLA, HARRI; HARTIKAINEN, PAIVI; PARTANEN, JUHANI; MANNINEN, HANNU; ENBERG, PENTTI; HIPPELAINEN, MIKKO
Archives of Neurology
May, 1998; Original Contribution: tzn618
LINE COUNT: 00840

... rewarming. A single venous cannula and a cardioplegia-aortic root vent were used. Patients were **cooled** to a core temperature of 32 degreesC. During perfusion, nonpulsatile flow was kept at the...

... de-airing was carried out before the aortic clamp was released. No patient required an **intra - aortic** balloon **pump** . During the operation, the patients received an average of 4.7 U of blood (range...

7/3,K/9 (Item 3 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01609199 SUPPLIER NUMBER: 17928774 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Long-term results of coronary artery bypass surgery in patients with severely depressed left ventricular function.
Shapiro, Itzhak; Isakov, Aharon; Yakirevich, Vladimir; Topilsky, Marcel
Chest, v108, n6, p1546(5)
Dec,
1995
PUBLICATION FORMAT: Magazine/Journal ISSN: 0012-3692 LANGUAGE: English
RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 3369 LINE COUNT: 00275

... the patients and urgently in 21 patients (11 of them came from the cardiac ICU). **Intra - aortic** balloon **pump** was used in eight patients. All patients underwent CABG using a standard operative technique. Single...

...was carried out with a two-stage venous cannula. Myocardial preservation was performed by systemic **hypothermia** , topical **hypothermia** , and

7/3,K/10 (Item 4 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01609198 SUPPLIER NUMBER: 17928772 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Cardiopulmonary bypass temperature does not affect postoperative euthyroid sick syndrome?
Thrush, David N.; Austin, David; Burdash, Nick
Chest, v108, n6, p1541(5)

Dec,
1995
PUBLICATION FORMAT: Magazine/Journal ISSN: 0012-3692 LANGUAGE: English
RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 3442 LINE COUNT: 00297

... fractions >3%) but recovered uneventfully, as did the other patients in this group.
In the **hypothermic** group, four of the six patients required inotropic support after CPB. Two of these patients...

...30 [micro] g/kg/min), amrinone (10 to 20 [micro] g/kg/min), and an **intra - aortic** balloon **pump** for left ventricular failure and died 3 days after surgery. Small distal coronaries with poor...

7/3,K/12 (Item 6 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01425408 SUPPLIER NUMBER: 14344814 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Army seeks better medical evacuation aircraft. (Medical News & Perspectives)
Gunby, Phil
JAMA, The Journal of the American Medical Association, v270, n6, p686(2)
August 11,
1993
PUBLICATION FORMAT: Magazine/Journal ISSN: 0098-7484 LANGUAGE: English
RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 856 LINE COUNT: 00075

... for up to nine patients, can support neonatal Isolettes or cardiac (blood pressure, pulse, electrocardiograph, **intraaortic** balloon **pump**) monitoring, carries a large range of possibly needed pharmaceuticals, and provides the onboard medic with suction equipment for pulmonary problems, ventilators, infusion pumps, and intravenous fluid warming or **cooling** .
The litter tiers can be converted into ambulatory patient Seating. There are three seats, mounted...

7/3,K/14 (Item 8 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01297827 SUPPLIER NUMBER: 10763930 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Ventricular free-wall rupture after myocardial infarction: treatment and outcome.
Pappas, Peter J.; Cernaianu, Aurel C.; Baldino, William A.; Cilley, Jonathan H., Jr.; DelRossi, Anthony J.
Chest, v99, n4, p892(4)
April,
1991
PUBLICATION FORMAT: Magazine/Journal ISSN: 0012-3692 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 2596 LINE COUNT: 00287

... patient was transferred to Cooper Hospital/University Medical Center, Camden, NJ, and was placed on **IABC** . On the same day, under **hypothermic** CPB, the patient underwent aortocoronary bypass grafting with saphenous vein to the left anterior descending...

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Set     Items   Description
S1        663   IABC OR IABP OR (INTRAAORTIC OR INTRA()AORTIC)(2N)(PUMP???
                OR COUNTERPULS? OR COUNTER()PULS?)
S2      56139   COOL??? OR HYPOTHERM? OR HYPO()THERM??
S3        109   S1 AND S2
S4         14   S1(S)S2
S5         14   RD (unique items)
S6         14   S5 NOT PY>2001
S7         14   S6 NOT PD>20011026
? show files
File 441:ESPICOM Pharm&Med DEVICE NEWS 2003/May W2
         (c) 2003 ESPICOM Bus.Intell.
File 442:AMA  Journals 1982-2003/Sep B2
         (c)2003 Amer Med Assn -FARS/DARS apply
File 444:New England Journal of Med. 1985-2003/May W3
         (c) 2003 Mass. Med. Soc.
File  95:TEME-Technology & Management 1989-2003/Apr W4
         (c) 2003 FIZ TECHNIK
File  98:General Sci Abs/Full-Text 1984-2003/Mar
         (c) 2003 The HW Wilson Co.
File 135:NewsRx Weekly Reports 1995-2003/May W1
         (c) 2003 NewsRx
File 149:TGG Health&Wellness DB(SM) 1976-2003/May W1
         (c) 2003 The Gale Group
File 369:New Scientist 1994-2003/Apr W4
         (c) 2003 Reed Business Information Ltd.
File 370:Science 1996-1999/Jul W3
         (c) 1999 AAAS
```

Biblio
NPL

8/5/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12689039 BIOSIS NO.: 200000442541
Cardiopulmonary cerebral resuscitation using emergency cardiopulmonary bypass, coronary reperfusion therapy and mild hypothermia in patients with cardiac arrest outside the hospital.
AUTHOR: Nagao Ken(a); Hayashi Nariyuki; Kanmatsuse Katsuo; Arima Ken; Ohtsuki Jyoji; Kikushima Kimio; Watanabe Ikuyoshi
JOURNAL: Journal of the American College of Cardiology 36 (3):p776-783 September, 2000

ABSTRACT: OBJECTIVES: The purpose of this study was to evaluate the efficacy of an alternative cardiopulmonary cerebral resuscitation (CPCR) using emergency cardiopulmonary bypass (CPB), coronary reperfusion therapy and mild **hypothermia** . BACKGROUND: Good recovery of patients with out-of-hospital cardiac arrest is still inadequate. An alternative therapeutic method for patients who do not respond to conventional CPCR is required. METHODS: A prospective preliminary study was performed in 50 patients with out-of-hospital cardiac arrest meeting the inclusion criteria. Patients were treated with standard CPCR and, if there was no response, by emergency CPB plus **intra - aortic** balloon **pumping** . Immediate coronary angiography for coronary reperfusion therapy was performed in patients with suspected acute coronary syndrome. Subsequently, in patients with systolic blood pressure above 90 mm Hg and Glasgow coma scale score of 3 to 5, mild **hypothermia** (34degreeC for at least two days) was induced by coil **cooling** . Neurologic outcome was assessed by cerebral performance categories at hospital discharge. RESULTS: Thirty-six of the 50 patients were treated with emergency CPB, and 30 of 39 patients who underwent angiography suffered acute coronary artery occlusion. Return of spontaneous circulation and successful coronary reperfusion were achieved in 92% and 87%, respectively. Mild **hypothermia** could be induced in 23 patients, and 12 (52%) of them showed good recovery. Factors related to a good recovery were cardiac index in **hypothermia** and the presence of serious complications with **hypothermia** or CPB. CONCLUSIONS: The alternative CPCR demonstrated an improvement in the incidence of good recovery. Based upon these findings, randomized studies of this **hypothermia** are needed.

8/5/5 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11161503 BIOSIS NO.: 199799782648
Influence of normothermic systemic perfusion during coronary artery bypass operations: A randomized prospective study.
AUTHOR: Birdi Inderpaul; Regragui Idris; Izzat Mohammed B; Bryan Alan J; Angelini Gianni D(a)
JOURNAL: Journal of Thoracic and Cardiovascular Surgery 114 (3):p475-481 1997
ISSN: 0022-5223

ABSTRACT: Objectives: Normothermic cardiopulmonary bypass has been proposed as a more physiologic technique than **hypothermic** bypass for the maintenance of the body during cardiac surgery. The aims of this study

were to investigate the effects of systemic perfusion temperature on clinical outcome after coronary revascularization. Methods: Three hundred patients (mean age 60 +- 9 years, 88% male) were prospectively randomized into three groups: **hypothermia** (28 degree C, n = 100), moderate **hypothermia** (32 degree C, n = 100), and normothermia (37 degree C, n = 100). All patients received cold antegrade St. Thomas' Hospital crystalloid cardioplegic solution, and patients in the normothermic group were actively rewarmed during cardiopulmonary bypass (nasopharyngeal temperature 37 degree C). Results: No differences were found between groups with respect to mortality (1%), **intraaortic** balloon **pump** use, perioperative infarction rates, focal neurologic deficits (1%), intubation time, intensive care unit stay, and postoperative hospital stay. Further stepwise regression analysis identified age and intensive care unit stay as important predictors of the variability in postoperative stay (both R-2 = 0.114; p lt 0.001), whereas perfusion temperature remained a nonsignificant explanator. Normothermic perfusion necessitated larger doses of phenylephrine to maintain arterial pressure above 50 mm Hg during cardiopulmonary bypass (p lt 0.0001 vs 28 degree C, p lt 0.01 vs 32 degree C) but less requirement for electrical defibrillation during reperfusion (p lt 0.05 vs 32 degree C, p lt 0.01 vs 28 degree C). Total chest drainage was not different between groups, but patients undergoing normothermic cardiopulmonary bypass required less transfusion of blood (p lt 0.05 vs 28 degree C and 32 degree C) and platelets (p lt 0.04 vs 32 degree C, p lt 0.001 vs 28 degree C) in the postoperative period. Conclusions: Cardiopulmonary bypass temperature did not influence early clinical outcome after routine coronary artery bypass operations. Normothermic systemic perfusion was associated with an increased requirement for vasoconstrictors and reduced requirements for electrical defibrillation and transfusion of blood products.

8/5/6 (Item 6 from file: 5)

11113454 BIOSIS NO.: 199799734599

Coronary artery bypass without aortic cross-clamp for occluded left main coronary artery.

AUTHOR: Okamura Yoshitaka; Sugita Youichi; Mochizuki Yoshihiko; Iida Hiroshi; Mori Hideaki; Yamada Yasuyuki; Shimada Kouichirou

JOURNAL: Dokkyo Journal of Medical Sciences 23 (3):p161-164 1996
ISSN: 0385-5023

ABSTRACT: We report a case of coronary artery bypass grafting in a patient with total obstruction of the left main coronary artery. Preoperative angiography revealed extracardial anastomosis to the left coronary artery. After prophylactic placement of an **intraaortic** balloon **pump**, the patient underwent triple coronary artery bypass employing elective ventricular fibrillation without aortic cross-clamp, but with topical **hypothermia**. The patient remains well with patent bypasses, and free from angina 3 years after the operation.

8/5/7 (Item 7 from file: 5)

10730107 BIOSIS NO.: 199799351252
Mild hypothermia **for the patients with severe circulatory insufficiency despite the use of** IABP .
AUTHOR: Yahagi N(a); Kumon K; Watanabe Y; Haruna M; Matsui J; Hayashi H; Takamoto S
JOURNAL: Anesthesiology (Hagerstown) 85 (3A):pA269 1996
CONFERENCE/MEETING: Annual Meeting of the American Society of Anesthesiologists New Orleans, Louisiana, USA October 19-23, 1996
ISSN: 0003-3022

8/5/8 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10462267 BIOSIS NO.: 199699083412
Successful application of hypothermia **combined with** intra - aortic **balloon** pump **support to low-cardiac-output state after open heart surgery.**
AUTHOR: Moriyama Yukinori(a); Iguro Yoshihumi; Shimokawa Shinji; Saigenji Hideaki; Toyohira Hitosi; Taira Akira
JOURNAL: Angiology 47 (6):p595-599 1996
ISSN: 0003-3197

ABSTRACT: The authors report a successful application of hypothermia, along with **intra - aortic** balloon **pump** (**IABP**) support, to postcardiotomy ventricular failure. Surface- **cooling** **hypothermia** was applied in 8 patients after open heart surgery. The original cardiac procedure consisted of 3 aortocoronary bypass graftings (ACBGs), 2 aortic valve replacements (AVRs), 1 repair for left ventricular (LV) rupture after mitral valve replacement (MVR), 1 MVR+ACBG, and 1 MVR+AVR+tricuspid valve annuloplasty (TAP). Their ages ranged from fifty-two to sixty-eight years with a mean of sixty-one years. Hemodynamic criteria for induction of **hypothermia** included cardiac index (CI) less than 2.0 L/min/m-2 with left atrial pressure greater than 18 mmHg despite the use of **IABP** and maximum pharmacologic support. Blood temperature was maintained at around 33 degree C. By six hours after induction of **hypothermia** the tissue oxygen consumption decreased significantly with no hemodynamic deterioration as compared with that before **cooling** . The duration of **hypothermia** ranged from thirty-six to one hundred fifty-nine hours with a mean of seventy-eight hours. All 8 patients finally discontinued **IABP** support with a mean driving time of one hundred thirty-two hours. Five of them were ultimately discharged from the hospital and returned to their previous life-style. The authors believe that, from the perspective of monetary and personal resources, the use of **hypothermia** with **IABP** support could be a therapeutic option for patients with postcardiotomy ventricular failure.

8/5/9 (Item 9 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10317250 BIOSIS NO.: 199698772168
Comparison of antegrade with antegrade/retrograde cold blood cardioplegia for myocardial revascularization.
AUTHOR: Cernaianu Aurel C(a); Flum David R; Maurer Monica; Cilley Jonathan

H Jr; Grosso Michael A; Browstein Louis; Delrossi Anthony J
JOURNAL: Texas Heart Institute Journal 23 (1):p9-14 1996
ISSN: 0730-2347

ABSTRACT: There has been increasing interest in the use of retrograde coronary sinus perfusion for delivery of cardioplegic solution during myocardial revascularization. Despite evidence of improved cardiac protection, it is unclear if a combined antegrade/retrograde approach to myocardial preservation offers significant clinical benefits. One hundred twenty patients undergoing elective 1st-time coronary bypass surgery for 3-or-more-vessel disease received aortic root, antegrade cold blood cardioplegia (Group I, n=52) or combined antegrade/retrograde cardioplegia via coronary sinus cannulation (Group II, n=68). All preoperative variables were similar including age, severity of coronary artery disease, functional status, and ejection fraction. Intraoperative and postoperative variables, including the degree of **hypothermia** , temperature of infusion solution, number of bypass grafts, defibrillation attempts and spontaneous return to sinus rhythm, the use of **intraaortic** balloon **pump counterpulsation** , and inotropic support during weaning from cardiopulmonary bypass, were not statistically different. Cardioplegia infusion time was longer in Group II than in Group I (2.5+-0.8 vs 7.7+-0.7 min, p lt 0.05). The postoperative cardiac output, electrocardiographic and cardiac enzyme evidence of ischemia, the need for temporary pacing, and 30-day morbidity and mortality were similar for both groups. The data indicate that in this non-risk-stratified group of patients, the route of cardioplegia administration is not a determinant of clinical outcome.

8/5/15 (Item 15 from file: 5)

09077734 BIOSIS NO.: 199497086104
Warm body, cold heart: Myocardial revascularization in 2383 consecutive patients.
AUTHOR: Singh Arun K(a); Feng William C; Bert Arthur A; Rotenberg Fred A
JOURNAL: Journal of Cardiovascular Surgery 34 (5):p415-421 1993
ISSN: 0021-9509

ABSTRACT: Systemic **hypothermia** is used almost universally in cardiac surgery. Since 1987, 2383 patients underwent normothermic cardiopulmonary bypass (NCPB, "warm body", bladder temperature 36 degree C) with cold blood cardioplegic arrest ("cold heart", 8-14 degree C) during myocardial revascularization. No patients were denied this technique regardless of age, condition or severity of surgery. Clinical characteristics in patients: Age range: 31-92 years, mean 66; male/female ratio 3:1; pump time (min): 23-228, mean 80; cross clamp time (min): 18-152, mean 60. One thousand, one hundred and sixty-one patients (49%) had urgent coronary artery bypass grafting (CABG). Ejection fraction was less than 0.4 in 843 patients (30%). Thirty-day operative mortality was 1% (23/2383 patients). Postoperative complications were: perioperative myocardial infarction (35 patients) = 1.5 %; postoperative bleeding requiring reexploration (33 patients) = 1.4%; stroke (22 patients) = 0.9%; mediastinal infection (24 patients) = 1%; and renal insufficiency (25 patients) = 1%. During NCPB (warm), systemic vascular resistance was extremely low, cardiac output

was high and it was easier to wean patients from the pump. No patient required the **intraaortic** balloon **pump** during peri- and post-operative periods. Pulmonary complications and coagulopathy were extremely rare. These results provide reassurance that NCPB (warm) in combination with cold cardioplegic arrest provides excellent myocardial and total body protection during myocardial revasculation and is particularly suitable for high-risk patients.

8/5/16 (Item 16 from file: 5)

08908890 BIOSIS NO.: 199396060391
Changing pattern of patients undergoing emergency surgical revascularization for acute coronary occlusion: Importance of myocardial protection techniques.
AUTHOR: Beyersdorf Friedhelm(a); Mitrev Zan; Sarai Koppany; Eckel Lothar; Klepzig Harald; Maul Frank D; Ihnken Kai; Satter Peter
JOURNAL: Journal of Thoracic and Cardiovascular Surgery 106 (1):p137-148 1993
ISSN: 0022-5223

ABSTRACT: Between 1977 and 1992 a total of 163 consecutive patients underwent emergency coronary artery bypass grafting after acute coronary occlusion (94% after failed angioplasty). Patients were divided into four groups according to the method used for myocardial protection. The crystalloid cardioplegia group included 30 patients operated on from 1977 to 1980; the **hypothermic** fibrillation group included 60 patients (1980 to 1986); the blood cardioplegia group included 36 patients (1986 to 1989); and the blood cardioplegia with controlled reperfusion group included 37 patients (1989 to 1992). Preoperative data, ischemic time interval, collateral blood flow, intraoperative data, regional wall motion, global ejection fraction, myocardial infarct-specific electrocardiographic changes, enzyme release, rhythm disturbances, mortality, prevalence of **intraaortic** balloon **pumping** , and inotropic support were assessed in this retrospective study. Our data indicate that the current spectrum of patients undergoing emergency coronary artery bypass grafting after acute coronary occlusion are at a significantly higher risk compared with those 15 years ago, that is, increase in age (53 +- 1 versus 59 +- 2 years; p lt 0.05), three-vessel disease (38% versus 3%; p = 0.004), acute occlusion of the left main coronary artery (11% versus 0%; p = 0.02), preoperative cardiogenic shock (35% versus 3%; p = 0.007), prevalence of acute two-vessel occlusion (22% versus 3%; p = 0.05), prevalence of previous infarction (59% versus 23%; p = 0.04), and duration of ischemia (3.0 +- 0.2 versus 4.1 +- 03 hours; p lt 0.05). Despite the increase in patients with severely compromised ventricular function during recent years, the overall hospital mortality decreased to 5% (2/37) when maximal protection of the ischemic and remote myocardium was performed (preoperative **intraaortic** balloon **pump** , combined antegrade/retrograde substrate-enriched blood cardioplegia, warm induction, controlled reperfusion, prolonged vented bypass). Single-vessel disease was always associated with a low mortality, whereas mortality could be reduced with controlled blood cardioplegia in patients with multivessel disease (6%) and cardiogenic shock (15%). The immediate return of regional contractility in the previously ischemic area after controlled reperfusion might serve as an explanation for these favorable

results. After unmodified blood reperfusion, normokinesis or slight hypokinesis occurs in only 34% to 46% in the early postoperative period (1 to 4 weeks) in comparison with 86% after controlled blood cardioplegia reperfusion (p lt 0.05). We conclude that there is a significant increase in risk factors in patients undergoing emergency coronary artery bypass grafting and that improved methods of intraoperative myocardial protection are needed for these compromised patients.

8/5/17 (Item 17 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08744897 BIOSIS NO.: 199395034248
Differences in pH management and pulsatile/nonpulsatile perfusion during cardiopulmonary bypass do not influence renal function.
AUTHOR: Badner Neal H(a); Murkin John M; Lok Peter
JOURNAL: Anesthesia & Analgesia 75 (5):p696-701 1992
ISSN: 0003-2999

ABSTRACT: The renal effects of pulsatile (pulse pressure 18.0 +- 1.5 mm Hg (mean +- SEM)) or nonpulsatile perfusion (mean pulse pressure 1.9 +- 0.4 mm Hg) during either alpha-stat (mean PaCO-2 41.2 +- 0.9 mm Hg measured at 37 degree C) or pH-stat (mean PaCO-2 60.6 +- 1.7 mm Hg measured at 37 degree C) pH management of **hypothermic** cardiopulmonary bypass (CPB) were studied in 100 patients undergoing elective coronary artery bypass surgery. Mean urine output, fractional excretion of sodium and potassium, and renal failure index all increased during the study period; however, there was no difference among the four different CPB management groups. Mean postoperative creatinine and blood urea nitrogen values decreased compared with preoperative values, again without differences among treatment groups. Three patients developed acute renal insufficiency; of these, two had received nonpulsatile perfusion and pH-stat management, and the other had been managed with pulsatile perfusion and pH-stat management. These three patients all had undergone prolonged CPB and required at least two vasoactive drugs and the use of an **intraaortic** balloon **pump** to be weaned from CPB. In patients with normal preoperative renal function undergoing **hypothermic** CPB, neither the mode of perfusion, pulsatile or nonpulsatile, nor the method of pH management, pH-stat or alpha-stat, influences perioperative renal function.

8/5/18 (Item 18 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07946350 BIOSIS NO.: 000093025448
CORONARY ARTERY BYPASS SURGERY FOR CHRONIC TOTAL OCCLUSION OF THE LEFT MAIN CORONARY ARTERY BY MEANS OF INTERMITTENT ANTEGRADE COLD BLOOD CARDIOPLEGIA
AUTHOR: SHIRAISHI Y; MIYAMOTO T; SHIMADA I; PAK C; SHINKURA N; OHNO N
JOURNAL: J JPN ASSOC THORAC SURG 39 (9). 1991. 131-134. 1991
FULL JOURNAL NAME: Journal of the Japanese Association for Thoracic Surgery
LANGUAGE: JAPANESE

ABSTRACT: From January, 1984, to May 1990 eleven patients (men 9, women 2)

underwent coronary artery bypass surgery for chronic total occlusion of the left main coronary artery by means of intermittent antegrade cold blood cardioplegia. The ages ranged from 33 to 74 (mean 56) years. The causes of the total occlusion of the left main coronary artery were atherosclerosis in 10 patients and aortitis syndrome in one. Four patients had history of a previous myocardial infarction. Preoperative selective coronary arteriography revealed well developed collateral vessels from the RCA to the LCA in all patients. One to five coronary arteries were bypassed. Myocardial protection was obtained in the usual fashion: antegrade intermittent cold blood cardioplegia with topical cardiac **cooling** . All paitients were successfully weaned off from cardiopulmonary bypass without the need of **IABP** assist. No patient developed perioperative myocardial infarction. All grafts were patent postoperatively. Treadmill testing was negative in all patients. We believe that coronary artery bypass surgery of chronic total occlusion of the left main coronary artery can be performed safely with intermittent antegrade cold blood cardioplegia.

8/5/23 (Item 23 from file: 5)

07518718 BIOSIS NO.: 000091081847

SURGERY FOR POSTINFARCTION VENTRICULAR SEPTAL PERFORATION UNDER HYPOTHERMIC FIBRILLATORY ARREST WITH PULSATILE PERFUSION

AUTHOR: HAMADA Y; KITAMURA S; KAWACHI K; NISHII T; TANIGUCHI S; MIZUGUCHI K ; FUKUTOMI M; HAGIHARA H; NIWAYA K
AUTHOR ADDRESS: DEP. SURGERY III, NARA MED. UNIV., KASHIHARA, JPN.

JOURNAL: J JPN ASSOC THORAC SURG 38 (12). 1990. 2390-2395. 1990
FULL JOURNAL NAME: Journal of the Japanese Association for Thoracic Surgery
LANGUAGE: JAPANESE

ABSTRACT: Surgery were performed by 2 different methods of myocardial protection in 17 patients with postinfarction ventricular septal perforation (VSP) from 1982 to 1989. Ten consecutive operations were performed using mypothermic fibrillatory arrest with pulastile perfusion (VF group). Pulsatile flow was produced by an **intra - aortic** balloon **pumping** device. Other 7 consecutive VSP operations were performed using cardioplegic arrest (CP group). In the VF group, the mean age was 67 years (range 54 to 78 years), and VSP was located in the anterior wall in 7, in the inferior wall in 2, and in the anterior and inferior walls in 1 patient. The operation was performed 2.5 days after the onset of VSP. In the CP group, the mean age was 71 years (range 50 to 78 years), and VSP was located in the anterior wall in 6 and in the inferior wall in 1 patient. The operation was performed 4.7 days after the onset of VSP. Cardiogenic shock developed after septal rupture in 50% of the patients in the VF group and 71% in the CP group (N.S.). Prior to the operation, no significant differences were found in hemodynamic status between the 2 groups. Cardiac index in the VF group was higher than that of the CP group ($p < 0.05$) shortly after cardiopulmonary bypass. The operative mortality rate was 10% in the VF group and 57% in the CP group. From these clinical results, **hypothermic** fibrillatory arrest with pulsatile perfusion can be beneficial as a method of myocardial protection during surgery for VSP and presently this has become the method of choice in our department.

8/5/24 (Item 24 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07451326 BIOSIS NO.: 000091047545
ROLE OF PERFUSION PRESSURE AND FLOW IN MAJOR ORGAN DYSFUNCTION AFTER CARDIOPULMONARY BYPASS
AUTHOR: SLOGOFF S; REUL G J; KEATS A S; CURRY G R; CRUM M E; ELMQUIST B A; GIESECKE N M; JISTEL J R; ROGERS L K; ET AL
JOURNAL: ANN THORAC SURG 50 (6). 1990. 911-918. 1990
FULL JOURNAL NAME: Annals of Thoracic Surgery

ABSTRACT: The role of perfusion pressure and flow during cardioplumonary bypass with moderate **hypothermia** and hemodilution in the development of new postoperative renal or clinicaly apparent cerebral dysfunction was examined in 504 adults. Cardiopulmonary bypass flow was examined in 504 adults. Cardiopulmonary bypass flow was target at greater than 40 mL .cntdot. kg-1 .cntdot. min-1 and pressure at greater than 50 mm Hg. Flows and pressures less than target occurred in 21.6% and 97.1% of patients, respectively. Fifteen patients (3.0%) suffered new renal and 13 (2.6%) new central nervous system dysfunction. Low pressure or flow during cadiopulmonary bypass, expressed in absolute values or in intensity-duration units, were not predictions of either adverse outcome. Multivariate analysis identified use of postoperative **intraaortic** balloon **counterpulsation** ($p < 10-6$), excessive blood loss in the ICU ($p < 10-4$), need for vasopressors before cardiopulmonary bypass ($p < 10-4$), postoperative myocardial infarction ($p < 10-3$), emergency reoperation ($p < 0.002$), excessive postoperative transfusion ($p < 0.02$), and chronic renal disease ($p < 0.03$) as independent predictors of postoperative renal dysfunction. Independent predictors of postoperative central nervous system dysfunction were cardiopulmonary resuscitation in the intensive care unit ($p < 10-6$), intracardiac thrombus or valve calcification ($p < 0.02$), and chronic renal disease ($p < 0.03$). Age greater than 65 years (40.7% of patients) did not predict either outcome. We conclude that failure of the native circulation during periods other than cardiopulmonary bypass rather than the flows and pressures considered here is the major cause of renal and clinically apparent central nervous system dysfunction after cardiac operations.

8/5/25 (Item 25 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06928168 BIOSIS NO.: 000089061561
A RANDOMIZED STUDY OF CARBON DIOXIDE MANAGEMENT DURING HYPOTHERMIC CARDIOPULMONARY BYPASS
AUTHOR: BASHEIN G; TOWNES B D; NESSLY M L; BLEDSOE S W; HORNBEIN T F; DAVIS K B; GOLDSTEIN D E; COPPEL D B
JOURNAL: ANESTHESIOLOGY 72 (1). 1990. 7-15. 1990
FULL JOURNAL NAME: Anesthesiology

ABSTRACT: Eighty-six patients undergoing coronary artery bypass graft (n = 63) or intracardiac (n = 23) for surgery were randomly assigned with respect to the target value for PaCO2 during cardiopulmonary bypass. In 44 patients the target PaCO2 was 44 mmHg, measured at the standard electrode temperature of 37.degree.C while in 42 patients the target

PaCO2 was 40 mmHg, corrected to the patient's rectal temperature (lowest value reached: mean 30.1, SD 1.9.degree.C). Other salient features of bypass management include use of bubble oxygenators without arterial filtration, flows of 1.8-2.4 1.cntdot.min-1.cntdot.m-2, mean hematocrit of 23%, and mean arterial blood pressure of approximately 70 mmHg, achieved by infusion of phenylephrine or sodium nitroprusside. Neuropsychologic function was assessed with series of tests administered on the day prior to surgery, just before discharge from the hospital (mean 8.0, SD 5,8 days postoperatively, n = 82), and again 7 months later (mean 220.7, SD 54.4 days postoperatively, n = 75). The scores at 8 days showed wide variability and generalized impairment unrelated to the PaCO2 group or to hypotension during cardiopulmonary bypass. At 7 months no significant difference was observed in neuropsychologic performance between the PaCO2 groups. Regarding cardiac outcome, there were no significant differences between groups in the appearance of new Q-waves on the electrocardiogram, the postoperative creatine kinase-MB fraction, the need for inotropic or **intraaortic** balloon **pump** support, or the length of postoperative ventilation or intensive care unit stay. These findings support the hypothesis that CO2 management during cardiopulmonary bypass at moderate **hypothermia** has no clinically significant effect on either neurobehavioral or cardiac outcome.

8/5/26 (Item 26 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06824504 BIOSIS NO.: 000088133950
IMPROVED CARDIAC FUNCTION WITH GLUCOSE INSULIN POTASSIUM AFTER AORTOCORONARY BYPASS GRAFTING
AUTHOR: GRADINAC S; COLEMAN G M; TAEGTMEYER H; SWEENEY M S; FRAZIER O H
JOURNAL: ANN THORAC SURG 48 (4). 1989. 484-489. 1989
FULL JOURNAL NAME: Annals of Thoracic Surgery

ABSTRACT: To assess the effectiveness of metabolic support for the heart in patients with refractory heart failure after **hypothermic** ischemic arrest for aortocoronary bypass grafting we assigned 22 patients to receive either intravenous glucose (50%), insulin (80 IU/L), and potassium (100 mEq/L) at a rate of 1 mL/kg/h for up to 48 hours (GIK) or glucose (5%) and NaCl (0.225%) at the same rate (control). All patients started out with a mean cardiac index of less than 3.0 L/min/m2, were on **intraaortic** balloon **pump** assistance, and required inotropic drugs. at 12 and 24 hours cardiac index had increased significantly in the GIK group when compared with the control group (3.6 and 3.4 versus 2.5 and 2.7 L/min/m2, respectively). Time on the **intraaortic** balloon **pump** (39 versus 61 hours) and requirements for inotropic drug support were significantly less in the GIK group than in the control group. All 11 GIK patients could be weaned from **intraaortic** balloon **pump** assistance. At 30 days after operation survival was 10/11 in the GIK group, compared with 7/11 in the control group. We conclude that GIK is both safe and effective in the treatment of refractory left ventricular failure after aortocoronary bypass grafting. The exact mechanism for the beneficial effect of GIK on myocardial contractility remains to be elucidated.

8/5/28 (Item 28 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

05170416 BIOSIS NO.: 000082011037
RESECTION OF LEFT VENTRICULAR ANEURYSM DURING HYPOTHERMIC FIBRILLATORY ARREST WITHOUT AORTIC OCCLUSION
AUTHOR: AKINS C W
JOURNAL: J THORAC CARDIOVASC SURG 91 (4). 1986. 610-618. 1986
FULL JOURNAL NAME: Journal of Thoracic and Cardiovascular Surgery

ABSTRACT: From December, 1977, through September, 1984, 100 consecutive patients had ventricular aneurysmectomy during **hypothermic** fibrillatory arrest without aortic occlusion. In the series were 83 men and 17 women, mean age 57.2 years. Primary indications for operation were angina pectoris in 42 patients, congestive heart failure in 23, angina plus congestive failure in 22, and refractory ventricular irritability in 13. Emergency operation was required for 13 patients with a **intra - aortic** balloon **pump** . Mean New York Heart Association Class was 3.1. Mean left ventricular end-diastolic pressure was 19.5 mm Hg, and mean left ventricular ejection fraction was 0.37. Concomitant coronary artery grafting was performed in 97 patients (mean 3.2 grafts/patient). Pressor agents were used in 21 patients and an **intra - aortic** balloon **pump** in two patients. Perioperative myocardial infarction was documented in one patient (1%). There were two hospital deaths (2%), both in patients with refractory ventricular irritability. At late follow-up (mean 38.5 months), 13 additional patients (13.3%) had died. Actuarial survival rate at 73 months was 77.0%. Survival rate was better for 93 patients with anterior aneurysms if the left anterior descending and/or diagonal coronary arteries were grafted with aneurysmectomy ($p < 0.03$). Although only ventricular arrhythmias predicted early death ($p < 0.03$), ejection fraction ($p < 0.01$) and ventricular arrhythmias ($p = 0.03$) predicted late death. Ventricular aneurysmectomy during **hypothermic** fibrillatory arrest without aortic occlusion can be performed with low hospital mortality and good long-term results. When possible, left anterior descending and/or diagonal coronary arteries should be grafted when anterior aneurysms are resected.

8/5/29 (Item 29 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

03961764 BIOSIS NO.: 000076047330
HYPO THERMIC ISCHEMIC ARREST VS. HYPO THERMIC POTASSIUM CARDIOPLEGIA IN HUMAN BEINGS
AUTHOR: JACOCKS M A; FOWLER B N; CHAFFIN J S; LOWENSTEIN E; LAPPAS D G; POHOST G M; BOUCHER C A; OKADA R D; HANNA N; DAGGETT W M
AUTHOR ADDRESS: MASS. GEN. HOSP., DEP. SURG., BOSTON, MA 02114.
JOURNAL: ANN THORAC SURG 34 (2). 1982. 157-165. 1982
FULL JOURNAL NAME: Annals of Thoracic Surgery

ABSTRACT: To determine if the addition of K enhances the myocardial protective effect of intracoronary perfusion **hypothermia** during aortic cross-clamping, 50 patients undergoing aortocoronary bypass grafting were studied in a randomized, prospective, double-blind fashion. Patients (26) received a cold crystalloid solution infused with a handheld syringe into the root of the cross-clamped aorta every 20 min, and 24 patients received the same solution but with 25 meq/l of KCl added, infused in a

similar manner. Both groups were analyzed by mortality, rate of perioperative myocardial infarction (electrocardiographic changes, MB-CPK [MB fraction of creatine phosphokinase] enzyme release, and preoperative and postoperative gated cardiac blood pool scans), intraoperative hemodynamic changes, intraoperative lactate determinations, postoperative arrhythmias, and requirements for pressor or **intraaortic** balloon **pump** support. One patient in the K cardioplegia group died (massive pulmonary embolism), and none in the **hypothermic** perfusion group died. Possible perioperative myocardial infarction was diagnosed by > 1 marker in 4 of 26 patients in the **hypothermic** perfusion group and 5 of 24 patients in the K group (P = 0.61). There were no differences between the 2 groups in terms of hemodynamic changes, lactate production, postoperative arrhythmias, or the need for postoperative hemodynamic support. This study in human beings could not demonstrate a specific protective effect of K, beyond that afforded by myocardial perfusion **hypothermia** and wash-out. Myocardial **hypothermia** , achieved through cold intracoronary arterial perfusion, may be the most important beneficial component of so-called cardioplegia for attaining effective intraoperative myocardial preservation in human beings.

8/5/30 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

0757116 NTIS Accession Number: PB-293 497/4/XAB
Protecting Ischemic Myocardium and Minimizing Infarct Size: Experimental Interventions and Studies Fundamental Thereto
(Final scientific rept. 30 Jun 75-29 Jun 78)
Hood, W. B.
Sponsor: National Heart, Lung, and Blood Inst., Bethesda, MD. Cardiac Disease Branch.
25 Oct 78 28p
Languages: English
A systematic investigation was carried out of the effects of ischemia in isolated perfused heart systems and in intact dogs with coronary occlusion. In isolated hearts, mechanical and metabolic effects of ischemia and reflow were characterized, and glucose and insulin were noted to be protective under conditions of moderate ischemia. In intact dogs, models of ischemic mechanical dysfunction were developed. **Intraaortic** balloon **counterpulsation** and **hypothermia** exerted protective effects, while nitroglycerin infusion did not. Mechanical dysfunction was noted to be a sensitive indicator of ischemia, appearing promptly after coronary occlusion and resolving slowly with reperfusion.
Descriptors: *Ischemia; *Myocardial infarction; *Cardiovascular diseases; *Heart diseases; Dogs; Laboratory animals; Hypoxia; Glycolysis; Pathology; In vitro analysis; Drug therapy; Performance; Contraction; Experimental data; Heart; Cardiology; Nitroglycerine; Metabolism

8/5/31 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10201484 Genuine Article#: 497LP Number of References: 21
Title: Beneficial effect of balloon-induced pulsatility on brain oxygenation in hypothermic cardiopulmonary bypass

Author(s): Hashimoto K (REPRINT) ; Onoguchi K; Takakura H; Sasaki T; Hachiya T; Oshiumi M; Takeuchi S
Journal: JOURNAL OF CARDIOVASCULAR SURGERY, 2001, V42, N5 (OCT), P587-593
ISSN: 0021-9509 Publication date: 20011000
Abstract: Background. Sufficient O-2 delivery to meet the demand is an important factor for protecting the brain during cardiopulmonary bypass (CPB). This study was designed to investigate the influences of temperature, pulsatility of blood flow (intra-aortic balloon pump-induced) and flow rate during CPB on the cerebral oxygenation.

Methods. Patients were divided into five groups. Normothermia (36 degreesC): pulsatile (n=8, 2.5 L/min/m(2)), nonpulsatile (n=12, 2.5 L), and nonpulsatile perfusion (n=12, 2.8 L); hypothermia (30 degreesC): pulsatile (n=9, 2.5 L) and nonpulsatile perfusion (n=11, 2.5 L). The oxygen saturation (SjVO(2)), lactate and CPK-BB levels in the jugular venous blood were measured.

Results. In all of the normothermic groups, the SjVO(2) value decreased during the CPB (p <0.1-0.01). No remarkable change was observed in the hypothermic groups, with the exception during the rewarming period in the nonpulsatile group. A higher SjVO(2) and a lower frequency of SjVO(2) values < 50% were observed in the hypothermic pulsatile group, as compared with those in the normothermic groups (p <0.05). The levels of CPK-BB were nearly the same, however the levels of lactate were higher in the normothermic pulsatile and nonpulsatile (2.5 L) groups (p <0.05).

Conclusions. We concluded that the hypothermic CPB was advantageous over normothermic CPB in regard to the SjVO(2) levels and lactate production. The beneficial effect of **intra - aortic** balloon **pump** assist was only obtained in the **hypothermic** CPB.

8/5/35 (Item 5 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06556063 Genuine Article#: ZA801 Number of References: 20
Title: Value of mild hypothermia in patients who have severe circulatory insufficiency even after intra - aortic **balloon** pump
Author(s): Yahagi N (REPRINT) ; Kumon K; Watanabe Y; Tanigami H; Haruna M; Hayashi H; Imanaka H; Takeuchi M; Ohashi Y; Takamoto S
Journal: JOURNAL OF CLINICAL ANESTHESIA, 1998, V10, N2 (MAR), P120-125
ISSN: 0952-8180 Publication date: 19980300
Abstract: Study Objective: To evaluate the effectiveness of mild hypothermia in postcardiac surgical patients with severe heart failure in spite of conventional medical therapy and the use of **intra - aortic** balloon **pumping** (**IABP**).

Design: Prospective, clinical study.

Setting: Teaching hospital.

Patients: 10 postcardiac surgical patients with severe heart failure despite the use of IABP with massive doses of catecholamine.

Interventions: Patients underwent mild hyperthermia produced by surface **cooling** (to approximately 34.5 degrees C). Hemodynamic criteria for the induction of hyperthermia included a cardiac index (CI) of less than 2.2 L/min/m(2) with a pulmonary capillary wedge pressure (PCWP) of up to 18 mmHg despite the use of **IABP** with massive doses of catecholamine.

Measurements and Main Results: After control measurements had been taken at normal core body temperature (37 degrees C), patients were **cooled** to approximately 34.5 degrees C (using a **cooling** blanket and gastric lavage with cold water) to decrease tissue oxygen (O-2) demand. Patients showed significant improvements in CI (1.9 +/- 0.3 to 2.2 +/- 0.3 L/min/m(2)), mixed venous O-2 saturation, (SvO(2); 55 +/- 7 to 64 +/- 6%), and urine output (2.1 +/- 1.1 to 3.4 +/- 2.2 ml/kg/hr). Patients were rewarmed while SvO(2) was being monitored. The duration of the **hypothermia** was 38 +/- 41 hours, Oxygen delivery increased in 8 of the 10 patients, the mean value (+/- SD) for the group rising from 309 +/- 65 ml/min/m(2) to 358 +/- 57 ml/min/m(2) as temperature was reduced from 36.7 +/- 0.4 degrees C to 34.7 +/- 0.3 degrees C, All patients were successfully weaned from **IABP** at 140 +/- 107 hours after admission to the intensive care unit.

Conclusions: Mild **hypothermia** is a simple and useful procedure for improving the circulation of postcardiac surgical patients with severe heart failure despite the use of **IABP** . (C) 1998 by Elsevier Science Inc.

8/5/36 (Item 6 from file: 34)

05827617 Genuine Article#: XA148 Number of References: 18

Title: Myocardial protection by pressure- and volume-controlled continuous hypothermic coronary perfusion (PVC-CONTHY-CAP) in combination with ultra-short beta-blockade and nitroglycerine

Author(s): Borowski A (REPRINT) ; Korb H

Journal: THORACIC AND CARDIOVASCULAR SURGEON, 1997, V45, N2 (APR), P51-54
ISSN: 0171-6425 Publication date: 19970400

Abstract: The aim of the study was to validate clinically a new technique of myocardial protection developed for intra- and extracardiac surgery on the beating heart. The concept combines the principle of continuous pressure- and volume-controlled coronary artery perfusion (PVC - CONTHY - CAP) with the specific myocardioprotective effects of **hypothermia** and nitrates and, on the other hand, with the beta-blocker-mediated reduction of chronotropy and inotropy necessary for convenient surgery. Under standard ECC conditions after cross-clamping the aorta coronary perfusion with oxygenated blood enriched with nitroglycerine (10 mu g/kg/h) and esmolol (0.05 mg/ml flow/min) is started via an additional perfusion cannula placed in the aortic root. The temperature of the perfusate is maintained at 32 degrees C, the intraaortic pressure at 40-70 mmHg and the perfusion flow in the range 0.8-1.0 ml/g heart muscle/min. In CABG procedures an additional perfusion catheter is used for perfusion of distal coronary artery segments. Using this technique 100 consecutive patients, adults and children, were operated on between 2/96 and 8/96. In 84 adult patients (age: 45-82yrs), 78 CABG procedures (54 elective, 13 urgent, 11 acute) with a mean bypass count of 3.7 (range 1-7), 69 ITA grafts, 72 grafts to CX, and 3 MVRec/MVRpl, and 6 pure MVRec/MVRpl procedures (1 urgent, 1 emergency) were performed. The mean coronary perfusion time was 48 min (range 21-88 min). In 5 patients perioperative infarction (CABG; 1 emergency after PTCA, 4 elective) with significant increase of CK-MB values (57-98 U/L) occurred. In the 4 elective patients (3 with diabetes mellitus) re-intervention was not possible due to small-vessel disease. In one patient with preoperative infarction **IABP** was necessary. No patient

died. There were 16 children (age: 4weeks-16yrs): VSD, n=6, AV-C, n=2, TOF, n=1, MVRec, n=1, DORV (Rastelli), n=2, SV (TCPC), n=3, and PV obstruction, n=1. The mean coronary perfusion time was 97 min (range: 27-260 min). The mean ICU stay 3.9 d (range: 1-10d). One child died (TCPC) on the 10th postoperative day due to multi-organ failure. In conclusion, PVC-CONTHY-CAP is designed especially for emergency and urgent procedures, i.e. patients with PTCA-related complications, patients with severely depressed LV function, and patients with complex congenital cyanotic heart defects. Using PVC-CONTHY-CAP, coronary artery bypass grafting as well as intracardiac procedures for congenital and acquired heart defects can be performed safely and conveniently, the system is easy to handle for both the cardiac surgeon and perfusionist. Due to its pharmacological properties continuous intracoronary application of nitrates in combination with **hypothermia** seems to be essential as a preventive treatment modality for the ischemic state.

8/5/37 (Item 7 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05324339 Genuine Article#: VM466 Number of References: 2
Title: MILD HYPOTHERMIA **FOR THE PATIENTS WITH SEVERE CIRCULATORY INSUFFICIENCY DESPITE THE USE OF** IABP
Author(s): YAHAGI M; KUMON K; WATANABE Y; HARUNA M; MATSUI J
Journal: ANESTHESIOLOGY, 1996, V85, N3A (SEP), PA269
ISSN: 0003-3022

8/5/38 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04949833 Genuine Article#: UU585 Number of References: 10
Title: SUCCESSFUL APPLICATION OF HYPOTHERMIA COMBINED WITH INTRAAORTIC **BALLOON** PUMP **SUPPORT TO LOW-CARDIAC-OUTPUT STATE AFTER OPEN-HEART-SURGERY**
Author(s): MORIYAMA Y; IGURO Y; SHIMOKAWA S; SAIGENJI H; TOYOHIRA H; TAIRA A
Journal: ANGIOLOGY, 1996, V47, N6 (JUN), P595-599
ISSN: 0003-3197
Abstract: The authors report a successful application of **hypothermia** , along with **intra - aortic** balloon **pump** (**IABP**) support, to postcardiotomy ventricular failure. Surface- **cooling** **hypothermia** was applied in 8 patients after open heart surgery. The original cardiac procedure consisted of 3 aortocoronary bypass graftings (ACBGs), 2 aortic valve replacements (AVRs), 1 repair for left ventricular (LV) rupture after mitral valve replacement (MVR), 1 MVR+ACBG, and 1 MVR+AVR+tricuspid valve annuloplasty (TAP). Their ages ranged from fifty-two to sixty-eight years with a mean of sixty-one years. Hemodynamic criteria for induction of **hypothermia** included cardiac index (CI) less than 2.0 L/min/m(2) with left atrial pressure greater than 18 mmHg despite the use of **IABP** and maximum pharmacologic support. Blood temperature was maintained at around 33 degrees C. By six hours after induction of **hypothermia** the tissue oxygen consumption decreased significantly with no hemodynamic deterioration

as compared with that before **cooling** . The duration of **hypothermia** ranged from thirty-six to one hundred fifty-nine hours with a mean of seventy-eight hours. All 8 patients finally discontinued **IABP** support with a mean driving time of one hundred thirty-two hours. Five of them were ultimately discharged from the hospital and returned to their previous life-style. The authors believe that, from the perspective of monetary and personal resources, the use of **hypothermia** with **IABP** support could be a therapeutic option for patients with postcardiotomy ventricular failure.

8/5/40 (Item 10 from file: 34)

02895946 Genuine Article#: MP149 Number of References: 0
(NO REFS KEYED)

Title: THE WARM VERSUS COLD PERFUSION CONTROVERSY - A CLINICAL COMPARATIVE-STUDY

Author(s): TONZ M; MIHALJEVIC T; PASIC M; VONSEGESSER LK; TURINA M

Journal: EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY, 1993, V7, N12 (DEC), P623-627
ISSN: 1010-7940

Abstract: To evaluate the effects of temperature on myocardial and total body protection, we analyzed 129 consecutive patients who underwent coronary artery bypass grafting, valve replacement, or both, with continuous cardioplegia (Cp). The patients were assigned to three groups: group I (n = 37) normothermic cardiopulmonary bypass (CPB) (37-degrees-C) and warm (37-degrees-C) Cp, group II (n = 49) normothermic CPB and cold (4-degrees-C) Cp and group III (n = 43) **hypothermic** (28-degrees-C) CPB and cold Cp. Comparison of groups I and II showed similar serum levels of creatine kinase (CK) and its myocardial-specific isoenzyme on the first postoperative day, a similar rate of perioperative myocardial infarction, postoperative need for **intra - aortic** balloon **pump** , postoperative need for inotropic support and mortality. Comparison of groups I and III showed similar serum levels of CK, amylase, lactate dehydrogenase and creatinine on the first postoperative day, a similar complication rate and mortality rate. However, normothermic CPB resulted in a shorter bypass time (83 +/- 4 vs 98 +/- 7 min, $P < 0.05$) and interval until extubation (25.0 +/- 3.8 vs 40.3 +/- 7.4 h, $P < 0.05$). In conclusion, there are no differences concerning myocardial protection, however, warm CPB shortens the perfusion time and postoperative course.

8/5/42 (Item 12 from file: 34)

02667753 Genuine Article#: LU754 Number of References: 0
(NO REFS KEYED)

Title: WARM BODY, COLD HEART-SURGERY - CLINICAL-EXPERIENCE IN 2817 PATIENTS

Author(s): SINGH AK; FENG WC; BERT AA; ROTENBERG FA

Journal: EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY, 1993, V7, N5 (MAY), P225-229
ISSN: 1010-7940

Abstract: Systemic **hypothermia** is used almost universally in cardiac surgery. Since 1987, 2817 patients have had normothermic cardiopulmonary bypass (NCPB, ''warm body'', bladder temperature 36-degrees-C) with cold blood cardioplegic arrest (''cold heart'', 8-degrees-14-degrees-C) during open heart surgery. No patients were denied this technique regardless of age, condition or severity of surgery. Clinical Characteristics in Patients: Age range: 16 - 84 years, mean 66; male/female ratio 3:1; pump time (min) 24-183, mean 91; cross-clamp time (min) 15-148, mean 68; types of surgery: coronary artery bypass (n = 2214), valvular (n = 489) and miscellaneous (aneurysms, tumors, arrhythmias, congenital, etc) (n = 114). One thousand and sixty-nine (1069) patients had urgent coronary artery bypass grafting (CABG). The ejection fraction was less than 0.40 in 843 patients (30%). The thirty-day operative mortality for the entire group was 1.7% (48/2817 patients): CABG = 1% (23/2214 patients), valvular = 3% (15/489 patients) and miscellaneous 9% (10/114 patients). Postoperative complications were: perioperative myocardial infarction (34 patients) = 1.2%, postoperative bleeding requiring reexploration (37 patients) = 1.3%, stroke (27 patients) = 1%, and mediastinal infection (21 patients) = 0.7%. During NCPB (WARM) systemic vascular resistance was extremely low, cardiac output was high and it was easier to wean patients from the **pump** . No **intraaortic** balloon **pump** was used during this period. Pulmonary complications and coagulopathy were extremely rare. These results provide reassurance that NCPB (WARM) in combination with cold cardioplegic arrest provides excellent myocardial and total body protection during cardiac surgery and is particularly suitable for high-risk patients.

8/5/46 (Item 3 from file: 73)

06902344 EMBASE No: 1997186732

The effects of pulsatile cardiopulmonary bypass on cerebral and renal blood flow in dogs

Cook D.J.; Orszulak T.A.; Daly R.C.

Journal of Cardiothoracic and Vascular Anesthesia (J. CARDIOTHORAC. VASC. ANESTH.) (United States) 1997, 11/4 (420-427)
CODEN: JCVAE ISSN: 1053-0770

Objective: The purpose of this study was to determine the effects of pulsatility on cerebral blood flow, cerebral metabolism, and renal blood flow over a range of cardiopulmonary bypass temperature and flow conditions. Design/Setting: The investigation was prospective, randomized, and performed in a canine physiology laboratory at the Mayo Foundation. Participants and Interventions: Anesthetized dogs were studied during pulsatile (n = 9) or nonpulsatile (n = 10) cardiopulmonary bypass at two flow rates (2.4 and 1.2 L/min/msup 2) at each of three temperatures (37degree, 32degree, and 27degreeC). Pulsatility was achieved by use of a pediatric **intraaortic** balloon **pump** . Cerebral blood flow and metabolic rate were determined using the sagittal sinus outflow method. Renal blood flow was determined by s periarterial ultrasonic flow probe. Measurements and Main Results: In the pulsatile group, a pulse pressure of 29 mmHg had no effect on cerebral blood flow or metabolism at any temperature under either flow condition. Renal blood flow was also unaffected by pulsatility, but decreased with **hypothermia** and reduced pump flow. Pulsatility also

did not attenuate the Systemic effects of normothermic hypoperfusion. Conclusions: Pulsatility has no significant effect on cerebral or renal perfusion over a broad range of cardiopulmonary bypass temperature and flow conditions. Cerebral blood flow and metabolism were functions of temperature but not pulsatility or flow rate. Renal blood flow was affected by both temperature and cardiopulmonary bypass flow rate but not by pulsatility. Finally, central nervous system perfusion may be preserved under low-flow cardiopulmonary bypass conditions by shunting of perfusion from splanchnic vascular beds.

8/5/47 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

06525771 EMBASE No: 1996191192
The use of retrograde cerebral perfusion in a patient with acute ascending aortic dissection following elective coronary bypass surgery: A case report
Ruby D.L.
Journal of Extra-Corporeal Technology (J. EXTRA-CORPOR. TECHNOL.) (United States) 1996, 28/2 (91-93)
CODEN: JEXCB ISSN: 0022-1058

A 74-year-old male patient presented with congestive heart failure and significant multivessel coronary artery disease. Following successful coronary artery bypass surgery, the patient developed an acute dissection of the ascending aorta. The patient was placed back on cardiopulmonary bypass and deep **hypothermic** circulatory arrest was instituted while the ascending aortic dissection was repaired. In an attempt to preserve brain tissue and decrease cerebral edema during **hypothermic** arrest, a modified form of retrograde cerebral perfusion was used. The patient tolerated the procedure and was weaned from cardiopulmonary bypass with the help of an **intraaortic** balloon **pump** . On the second postoperative day, the patient woke up and responded appropriately to verbal commands.

8/5/48 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

05828970 EMBASE No: 1994236844
Continuous normothermic retrograde cardioplegia for valve surgery
Martella A.T.; Hoffman D.M.; Nakao T.; Frater R.W.M.
Journal of Heart Valve Disease (J. HEART VALVE DIS.) (United Kingdom) 1994, 3/4 (404-409)
CODEN: JHVDE ISSN: 0966-8519

We have studied warm heart surgery, deemed as continuous warm blood cardioplegia and normothermic cardiopulmonary bypass (CPB), as an alternative to the technique of intermittent cold cardioplegia for valvular surgery. Between August 1990 and January 1994, 137 consecutive patients underwent valve repair or replacement using normothermic CPB. Eighty-six of these patients received continuous normothermic retrograde blood cardioplegia via the coronary sinus (CNRC). Fifty-one patients received intermittent cold blood cardioplegia (ICBC). All procedures were performed by the same surgeon (RWMF). The two groups were matched for age, sex, NYHA

class, pre-operative ejection fraction, diagnosis, procedure and activated clotting time. Warm blood cardioplegia was delivered continuously via the coronary sinus after antegrade arrest (oxygenated blood 1:4 to 1:3; 37degreeC, 250-300 ml/min, maintaining coronary sinus pressures of 40-60 mmHg. Perioperative myocardial infarction was significantly less prevalent (4.6 vs. 8.0%; p<0.05) in the warm cardioplegia group. Cardiac output immediately after bypass was significantly higher than before bypass only in the CNRC group (4.1 +/- 0.8 to 5.2 +/- 0.9 L/min; p<0.01). CNRC patients had significantly higher incidence of spontaneous resumption of sinus rhythm at cross-clamp removal (80 of 86, 93%) compared to the **hypothermic** patients (14 of 51, 27%, p<0.001). The time from removal of the aortic cross-clamp to discontinuation of CPB (reperfusion time) was significantly shorter in the warm cardioplegia group (43 +/- 7.4 versus 75 +/- 10.2 min; p<0.001. There were no significant differences in postoperative potassium levels, need for **intra - aortic** balloon **pump** (CNRC 3/86, 3.5% vs. ICBC 3/51. 5.9%) or deaths (CNRC 2/86, 2.3% vs. ICBC 4/51, 7.8%). Hospital stay was longer in the ICBC group (17 versus 13 days). 31 of these patients (16-CNRC, 15-VS.) underwent transesophageal echocardiography during three separate periods of the operation; (a) prior to onset of CPB, (b) immediately after completion of CPB, and (c) following chest closure. There was no change in right ventricular wall motion score (SWMA-R) between the cold and warm groups (2.2 +/- 0.2 and 2.0 +/- 0.2, respectively). Left ventricular wall motion score worsened in seven of 15 (47%) patients in the VS. group and only three of 16 (18%) in the CNRC group. There was no significant difference in left ventricular end-systolic internal dimension, end systolic wall stress or left ventricular contractility index. In conclusion, patients receiving CNRC were more likely to resume spontaneous rhythm in a shorter time, required less postoperative inotropic support with a better cardiac output. CNRC is a safe and effective technique for myocardial protection during valve surgery.

8/5/51 (Item 8 from file: 73)

04168155 EMBASE No: 1990050697

Clinical evaluation of hyypothermic ventricular fibrillation, multi-dose blood cardioplegia, and single-dose Bretschneider cardioplegia in coronary surgery

Beyersdorf F.; Krause E.; Sarai K.; Sieber B.; Deutschlander N.; Zimmer G.; Mainka L.; Probst S.; Zegelman M.; Schneider W.; Satter P.

Thoracic and Cardiovascular Surgeon (THORAC. CARDIOVASC. SURG.) (Germany) 1990, 38/1 (20-29)
CODEN: TVCHA ISSN: 0171-6425
LANGUAGE: ENGLISH SUMMARY LANGUAGE: GERMAN; ENGLISH

37 Patients undergoing coronary revascularization were randomly assigned to three protocols for intraoperative myocardial protection: **hypothermic** ventricular fibrillation (HF) (n = 13), multi-dose blood cardioplegia (BCP) (n = 12) and single-dose Bretschneider's crystalloid cardioplegia (CCP) (n = 12). As intraoperative markers of ischemic damage myocardial ultrastructure, ATP, and CP contents were determined in left ventricular biopsy specimens taken before and after cardiac arrest. Release of serum enzymes (CK, CK-MB, LDH, SGOT) was determined pre- and postoperatively. Hemodynamic data were assessed before, during, and after operation. The incidence of low cardiac output, positive inotropic support, **intraaortic**

balloon **counterpulsation** , peri-operative myocardial infarction, rhythm disturbances, and the rate of spontaneous defibrillation was compared between groups. The results show a better preservation of high energy phosphates in the BCP group as compared to the HF and CCP groups. Myocardial ultrastructure showed moderate ischemic damage in the **hypothermic** fibrillation group; in contrast, only slightly deteriorated cells were seen after cardiac arrest, when cardioplegia was used. The incidence of rhythm disturbances was 25% for HF and 42% for CCP. In contrast, only 17% of new rhythm disturbances were seen in the BCP group. Functional recovery (i.e. CI and SWI) of hearts protected with BCP was generally greater as compared to HF and CCP. Release of MB-creatine-kinase isoenzyme was higher in the HF group as compared to cardioplegia. Clinical outcome in terms of incidence of peri-operative infarction, positive inotropic support and low cardiac output was superior in the BCP group but not significantly different between groups. It is concluded that HF results in a higher release of CK-MB and a moderate ultrastructural ischemic injury, as compared to both cardioplegic groups. BCP provides excellent results in coronary patients in all parameters used.

8/5/53 (Item 10 from file: 73)

02406758 EMBASE No: 1983175769
Combined aortic valve replacement and myocardial revascularization. Experience with a cold cardioplegic technique
Kouchoukos N.T.; Lell W.A.; Rogers W.J.
Annals of Surgery (ANN. SURG.) (United States) 1983, 197/6 (721-727)

The authors reviewed their experience with combined aortic valve replacement and coronary artery bypass grafting using a standardized cold cardioplegic technique for intraoperative myocardial protection in 54 consecutive patients during a 5-year interval ending in May 1982. Calcific aortic stenosis was the most common indication for aortic valve replacement. Thirty-seven patients (69%) had greater than 50-60% stenoses in at least two of the three major coronary arterial systems. No patient with combined aortic valvular and coronary artery disease had only valve replacement during the study interval, and no patient was refused operation. The mean number of arteries grafted was 2.4. There was one hospital death (1.9%), and one patient (1.9%) had electrocardiographic evidence for perioperative myocardial infarction. One additional patient required postoperative **intra - aortic** balloon **pumping** . There have been four late deaths in the followup period extending to 65 months. Survival at 3 years for the entire group was 87%, for the patients with aortic stenosis was 95%, and for the patients with aortic regurgitation or mixed lesions was 65%. There were no cardiac-related deaths among the patients with aortic stenosis and one non-fatal myocardial infarction in the follow-up period. The results with this technique of intraoperative myocardial protection are superior to those reported with peviously employed methods (coronary perfusion, **hypothermic** ischemic arrest) and indicate that coronary artery bypass grafting should be performed in all patients with coexisting aortic valvular and coronary artery disease who require valve replacement. A substantial benefit (increased survival, decreased late myocardial infarction) may exist for the subgroup of patients with aortic stenosis.

8/5/54 (Item 11 from file: 73)
DIALOG(R)File 73:EMBASE

02087583 EMBASE No: 1982190679
Hypothermic ischemic arrest versus hypothermic potassium cardioplegia in human beings
Jacocks M.A.; Fowler B.N.; Chaffin J.S.; et al.
Massachusetts Gen. Hosp., Dept. Surg., Boston, MA 02114 United States
Annals of Thoracic Surgery (ANN. THORAC. SURG.) (United States) 1982, 34/2 (157-165)

To determine if the addition of potassium enhances the myocardial protective effect of intracoronary perfusion **hypothermia** during aortic cross-clamping, 50 patients undergoing aortocoronary bypass grafting were studied in a randomized, prospective, double-blind fashion. Twenty-six patients received a cold crystalloid solution infused with a hand-held syringe into the root of the cross-clamped aorta every 20 minutes, and 24 patients received the same solution but with 25 mEq/L of potassium chloride added, infused in a similar manner. Both groups were analyzed by mortality, rate of perioperative myocardial infarction (electrocardiographic changes, MB-CPK enzyme release, and preoperative and postoperative gated cardiac blood pool scans), intraoperative hemodynamic changes, intraoperative lactate determinations, postoperative arrhythmias, and requirement for pressor or **intraaortic** balloon **pump** support. One patient in the potassium cardioplegia group died (massive pulmonary embolism), and nine in the **hypothermic** perfusion group died. Possible perioperative myocardial infarction was diagnosed by more than one marker in 4 of 26 patients in the **hypothermic** perfusion group and 5 of 24 patients in the potassium group ($p = 0.61$). There were no differences between the two groups in terms of hemodynamic changes, lactate production, postoperative arrhythmias, or the need for postoperative hemodynamic support. This study in human beings could not demonstrate a specific protective effect of potassium, beyond that afforded by myocardial perfusion **hypothermia** and wash-out. The data suggest that myocardial **hypothermia** , achieved through cold intracoronary arterial perfusion, may be the most important beneficial component of so-called cardioplegia for attaining effective intraoperative myocardial preservation in human beings.

8/5/57 (Item 14 from file: 73)
DIALOG(R)File 73:EMBASE

01334675 EMBASE No: 1979055334
Unstable angina: the case for operation
Olinger G.N.; Bonchek L.I.; Keelan Jr. M.H.; et al.
American Journal of Cardiology (AM. J. CARDIOL.) (United States) 1978 , 42/4 (634-640)

From July 1975 through September 1977, surgical revascularization was performed in 95 consecutive patients with unstable angina, 53 at high risk (defined as in-hospital pain at rest with reversible ischemic electrocardiographic changes) and 42 at low risk (defined as pain at rest remitting upon hospitalization). Historical, electrocardiographic and cardiac catheterization data were similar in both groups; however, patients at high risk required large doses of propranolol, and one patient needed

additional **intraaortic counterpulsation** for preoperative stabilization of ischemia. Proximal left anterior descending (79 patients) and left main (15 patients) coronary artery disease with abnormal ventricular function characterized both groups of patients with unstable angina. Revascularization (2.5 grafts/patient) was performed with **hypothermia** and intermittent ischemic arrest. Complications included one death and three perioperative infarctions. No patient needed inotropic support. No late deaths occurred in a follow-up period of up to 30 months. The data indicate that (1) 'prophylactic' preoperative **intraaortic** balloon **counterpulsation** in patients with unstable angina, although advocated by some surgeons, is unnecessary; (2) the very small incidence of complications when unstable angina - particularly high risk unstable angina - is managed as outlined strongly suggests that surgical revascularization is definitive therapy; and (3) the therapeutic implications of large scale controlled studies of medical versus surgical therapy for unstable angina, which include results achieved 3 or 4 years ago and describe significantly higher rates of mortality and infarction than those reported here and by others, may not be pertinent to therapeutic decisions made today.

8/5/60 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03653894 JICST ACCESSION NUMBER: 98A0738092 FILE SEGMENT: JICST-E
Protection of Organ Dysfunction in Severe Circulatory Failure. Mild Hypothermia for LOS after Cardiac Surgery.
KUMON KEIJI (1)
ICU to CCU(Japanese Journal of Intensive Care Medicine), 1998, VOL.22,NO.7 , PAGE.483-487, FIG.3, TBL.3, REF.7
JOURNAL NUMBER: Z0581BAW ISSN NO: 0389-1194
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
ABSTRACT: Low cardiac output syndrome (LOS) is defined as an imbalance of oxygen demand and supply due to deteriorated cardiac function after cardiac surgery. Mild **hypothermia** (approximately 35.DEG.C. of core temperature) for LOS is a treatment to protect subsequent multiple organ failure due to LOS by improving the imbalance of oxygen demand and supply. The mild **hypothermia** is indicated in palients with below 40/Cao2 of cardiac index despite of various circulatory supports. However, it should be indicated in patients with severe arteriosclerosis in preference to **IABP** because of avoiding shower emboli a fatal complication of **IABP** . Moreover, concomitant application of the mild **hypothermia** with **IABP** or PCPS might result in reducing assist fiow in PCPS and in early weaning from these mechanical cardiac supports Therefore the mild **hypothermia** for LOS should be beneficial not only in the therapy but also in medical economics. (author abst.)

8/5/62 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03533157 JICST ACCESSION NUMBER: 98A0222299 FILE SEGMENT: JICST-E
Hypothermia for the management of low cardiac output state after open heart surgery.

YOTSUMOTO GOICHI (1); MORIYAMA YUKINORI (1); IGURO YOSHIFUMI (1); KINJO TAMAHIRO (1); YAMAOKA AKIHIRO (1); SHIMOKAWA SHINJI (1); TOYOHIRA HITOSHI (1); TAIRA AKIRA (1)
Nippon Teitaion Kenkyukai Kaishi(Journal of the Japanese Society for Hypothermia),. 1997, VOL.17,NO.1, PAGE.48-55, FIG.7, TBL.2, REF.5
JOURNAL NUMBER: Y0716AAQ ISSN NO: 0911-2588
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
ABSTRACT: Surface-cooling hypothermia was applied in 9 patients together with **intraaortic** balloon **pump** (**IABP**) support for postcardiotomy ventricular failure. They consisted of 3 coronary artery bypass graftings (CABGs), 2 aortic valve replacements (AVRs), 1 repair for left ventricular rupture after mitral valve replacement (MVR), 1 MVR + CABG, 1 MVR + AVR + tricuspid valve annuloplasty, and 1 Hemiarch repair. The criteria for induction of **hypothermia** was less than 2.0 L/min/m2 of the cardiac index with greater than 18 mmHg of pulmonary capillary wedge pressure under **IABP** and maximum pharmacologic support. Blood temperature was maintained at around 33 .DEG.C. to keep mixed venous oxygen saturation up to 50 % . After induction of **hypothermia** , the tissue oxygen consumption decreased significantly with no hemodynamic deterioration. **IABP** support was finally discontinued in all the 9 patients and six of them were ultimately discharged from the hospital. We believe that the use of **hypothermia** with **IABP** support will become one of the therapeutic options in selected cases of postoperative cardiac failure. (author abst.)

8/5/66 (Item 7 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03225532 JICST ACCESSION NUMBER: 97A0314097 FILE SEGMENT: JICST-E
Mild hypothermia **for LOS despite using** IABP .
YAHAGI NAOKI (1); KUMON KEIJI (1); WATANABE YASUHIKO (1); HARUNA MASAKI (1); MATSUI JUNKI (1); HAYASHI HIDEAKI (1); TAKAMOTO SHIN'ICHI (1)
Junkankika(Cardioangiology), 1997, VOL.41,NO.2, PAGE.215-216, REF.4
JOURNAL NUMBER: Y0038AAN ISSN NO: 0388-1911
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

8/5/68 (Item 9 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03017184 JICST ACCESSION NUMBER: 96A0775225 FILE SEGMENT: JICST-E
Survival of a Patient with Postinfarction Ventricular Septal Defect following Venoarterial Bypass with Centrifugal Pump and Reoperation for Residual Shunt.
OUCHI HIROSHI (1); FUKUDA IKUO (1); MATSUZAKI KANJI (1)
Kyobu Geka(Japanese Journal of Thoracic Surgery), 1996, VOL.49,NO.10, PAGE.838-841, FIG.2, TBL.1, REF.13
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
ABSTRACT: A 61-year-old man was hospitalized because of circulatory collapse due to postinfarction ventricular septal defect. As his hemodynamic condition deteriorated despite **intraaortic counterpulsation** , he underwent patch closure of VSP and patch reconstruction of the anterior left ventricular wall concomitant with coronary artery bypass grafting to the circumflex lesion immediately

after admission. Femorofemoral circulatory assist with centrifugal pump was necessitated to wean from cardiopulmonary bypass because of severe left ventricular dysfunction. Circulatory assist was controlled to maintain mixed venous oxygen saturation of more than 70% under mild **hypothermia** . On the second postoperative day(POD), increased oxygen saturation from right atrium to pulmonary artery developed(Qp/Qs=2.1). Further surgery was performed on an emergency basis for additional patch closure of VSP. Then he was successfully weaned from cardiopulmonary bypass successfully. The patient was extubated on the 14th POD and was ambulatory when he discharged on the 56th POD. Immediate surgical intervention should be performed for the patient with postinfarction ventricular septal defect when the hemodynamic state deteriorates under **intraaortic counterpulsation** . (author abst.)

8/5/69 (Item 10 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03003314 JICST ACCESSION NUMBER: 96A0486237 FILE SEGMENT: JICST-E
Hypothermia **for the management of** IABP **dependent cases after ACBG.**
IGURO YOSHIFUMI (1); SHIMOKAWA SHINJI (1); TOYOHIRA HITOSHI (1); UMEBAYASHI YUSUKE (1); HASHIGUCHI MASAHIKO (1); FUKUDA SHIGERU (1); TAIRA AKIRA (1)
Junkankika(Cardioangiology), 1996, VOL.39,NO.5, PAGE.503-504, FIG.1, TBL.1, REF.1
JOURNAL NUMBER: Y0038AAN ISSN NO: 0388-1911
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

8/5/76 (Item 17 from file: 94)
DIALOG(R)File 94:JICST-EPlus

01684318 JICST ACCESSION NUMBER: 92A0746208 FILE SEGMENT: JICST-E
The Effects of IABP **on Cardiovascular Hemodynamics under Simple Deep** Hypothermia .
KIMURA YUKIHIRO (1)
Iwate Igaku Zasshi(Journal of the Iwate Medical Association), 1992, VOL.44,NO.4, PAGE.405-415, FIG.8, TBL.1, REF.32
JOURNAL NUMBER: Z0101AAN ISSN NO: 0021-3284 CODEN: IIZAA
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
ABSTRACT: The effects of intraaortic ballon pumping (**IABP**) on cardiovascular hemodynamics under simple deep **hypothermia** were investigated. Twenty mongrel dogs were **cooled** to 20.0.DEG.C. on esophageal temperature, and were rewarmed to 35.0.DEG.C. by simple deep **hypothermia** . Hemodynamic parameters were measured at 2.5.DEG.C.-intervals during **cooling** and rewarming. The dogs were divided into 2 groups, in one group **IABP** was used during **hypothermia** below 30.0.DEG.C., in another group **IABP** was not used. There were no differences between the two groups at any temperature for heart rate(HR), mean aortic pressure(AP), mean pulmonary arterial pressure(PAP), mean right atrial pressure (RAP), cardiac index(CI), stroke volume index(SVI), pulmonary vascular resistance(PVR), or right and left work index(RWI, LWI). With respect to systemic vascular resistance(SVR), the **IABP** group displayed higher values than those of

the control group at every temperature except the **cooling** and rewarming process from 25.0.DEG.C. to 20.0.DEG.C. ($p<0.05$). The mean pulmonary capillary wedge pressure(PCWP) in the **IABP** group was elevated at 32.5.DEG.C. and 35.0.DEG.C. in the rewarming process ($p<0.05$). As the results, the **IABP** group tended to develop cardiac failure during the last rewarming period. The inefficiency of **IABP** and the tendency for cardiac failure to occur may have been due to balloon catheter size, aortic wall compliance, low cardiac output at a low body temperature. (author abst.)

8/5/77 (Item 18 from file: 94)

01671080 JICST ACCESSION NUMBER: 92A0746209 FILE SEGMENT: JICST-E

Coronary Circulation and Myocardial Metabolism Using Intra - aortic **Balloon** Pumping **(IABP) under Simple Deep** Hypothermia .

CHIBA SATORU (1)

Iwate Igaku Zasshi(Journal of the Iwate Medical Association), 1992, VOL.44,NO.4, PAGE.417-429, FIG.11, TBL.2, REF.39
JOURNAL NUMBER: Z0101AAN ISSN NO: 0021-3284 CODEN: IIZAA
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

ABSTRACT: The effects of intra-aortic ballon pumping(**IABP**) under simple deep **hypothermia** were evaluated on coronary circulation and myocardial metabolism in dogs. 1) Coronary blood flow (circumflex branch) was measured in seven healthy dogs under simple deep **hypothermia** at the body temperature of 30.DEG.C., 27.5.DEG.C., 25.DEG.C., 22.5.DEG.C., and 20.DEG.C. during **cooling** and at 22.5.DEG.C., 25.DEG.C., 27.5.DEG.C., and 30.DEG.C. during rewarming when **IABP** was off or on. During **cooling** , coronary blood flow was unchanged by **IABP** at 30.DEG.C. and 27.5.DEG.C.. It then increased by 8.0.+-.2.3% at 25.DEG.C., and 12.1.+-.3.0% at 22.5.DEG.C.. However, it was unchanged at the lowest temperature of 20.DEG.C.. During rewarming, coronary blood flow increased by 18.0.+-.3.9% at 22.5.DEG.C., 10.7.+-.2.5% at 25.DEG.C., 4.6.+-.2.2% at 27.5.DEG.C., and 2.6.+-.1.9% at 30.DEG.C.. 2) Sixteen healthy dogs were introduced into simple deep **hypothermia** combined wit **IABP** (the **IABP** group, n=8) or without **IABP** (the non- **IABP** group, n=8). In the **IABP** group, pumping was performed from 30.DEG.C. during **cooling** to 30.DEG.C. during rewarming. The myocardial oxygen extraction ratio was higher in the **IABP** group than in the non- **IABP** group at the lowest temperature of 20.DEG.C. ($P<0.01$). In addition the myocardial lactate extraction ratio was higher in the **IABP** group than in the non- **IABP** group at 25.DEG.C. during rewarming ($P<0.05$). These results suggest that use of **IABP** assists in maintaining coronary circulation and myocardial metabolism at temperatures above 20.DEG.C.. (author abst.)

DESCRIPTORS: dog; animal test; induced hypothermia; intra-aortic balloon pumping; combination therapy; heparin; dextran; blood flow; cardiac output; oxygen consumption; heartbeat; blood pressure; lactam; anesthetic; urea compound; organosulphur compound; allyl compound; steroid; nitrogen heterocyclic compound; aliphatic carboxylic acid; neuromuscular blocking drug; quaternary ammonium; carboxylate(ester); steroid hormone; glucocorticoid; enone; alicyclic alcohol; alicyclic ketone; organofluorine compound; phenothiazine tranquilizer; sulfur heterocyclic compound; polynuclear aromatic compound; aliphatic ketone; aliphatic alcohol

8/5/80 (Item 21 from file: 94)
DIALOG(R)File 94:JICST-EPlus

00652566 JICST ACCESSION NUMBER: 88A0422608 FILE SEGMENT: JICST-E
Improved efficacy of intra-aortic balloon pumping by pharmacological myocardial protection for postoperative pump failure after coronary revascularization.
SUNAMORI M (1); SUZUKI A (1)
Jpn J Surg, 1988, VOL.18,NO.1, PAGE.61-67, FIG.5, TBL.1, REF.24
JOURNAL NUMBER: Z0754AAB ISSN NO: 0047-1909
ABSTRACT: Fifty patients took part in a randomized and prospective study to define the effect of pharmacological myocardial protection when using **IABP** in patients with postoperative pump failure, following coronary revascularization under cardiopulmonary bypass employing moderate **hypothermia** and cardioplegia. Pharmacological protection was given to 23 patients, administering coenzyme Q, 5mg/kg, and aprotinin, 10,000KIU/kg, intravenously, every 12 hours, following surgery. A single dose of each drug was also given intraoperatively. The postoperative haemodynamics, serum enzyme levels and success of weaning from **IABP** , were compared between the group of patients who received pharmacological protection(the treated group) and the control group which comprised 27 patients who were treated only with **IABP** . Among the surviving patients, no significant differences were seen in the hemodynamics or cardiac enzyme levels between the two groups. The rate of successful weaning from **IABP** however, was 95 per cent in the treated group as compared with only 74 per cent in the control group, p=0.02. These results suggest that pharmacological myocardial protection, using coenzyme Q and aprotinin in both the intra- and post-operative periods, improves the efficacy of **IABP** in the treatment of post-operative pump failure following coronary revascularization.(author abst.)

8/5/83 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09409758 21176586 PMID: 11279752
Hypothermia to reduce neurological damage following coronary artery bypass surgery.
Rees K; Beranek-Stanley M; Burke M; Ebrahim S
Cochrane database of systematic reviews (Online - Update Software) (England) 2001, (1) pCD002138, ISSN 1469-493X Journal Code: 100909747
BACKGROUND: Coronary artery bypass surgery (CABG) may be life saving, but known side effects include neurological damage and cognitive impairment. The temperature used during cardiopulmonary bypass (CPB) may be important with regard to these adverse outcomes, where **hypothermia** is used as a means of neuroprotection. OBJECTIVES: To assess the effectiveness of **hypothermia** during CABG in reducing neurological damage and subsequent cognitive deficits. SEARCH STRATEGY: The Cochrane Controlled Trials Register was searched for randomised controlled trials (RCT) and this was updated by searching MEDLINE and EMBASE to December 1999 using database specific RCT filters. Reference lists of retrieved articles were searched and experts in the field were contacted. SELECTION CRITERIA: Only RCTs were

considered. All patients undergoing CABG, either first time or revisions, elective or emergency procedures, were included. Any **hypothermia** protocol was considered. Only trials reporting neurological outcomes were included. DATA COLLECTION AND ANALYSIS: Studies were selected independently and data were extracted from the source papers independently by two reviewers. Authors were contacted for further information. Studies were combined with meta-analysis where appropriate, and meta-regression was used to explore heterogeneity. MAIN RESULTS: There was a trend towards a reduction in the incidence of non fatal strokes in the **hypothermic** group (OR 0.68 (0.43, 1.05)). Conversely, there was a trend for the number of non stroke related perioperative deaths to be higher in the **hypothermic** group (OR 1.46 (0.9, 2.37)). **Hypothermia** had no effect on the incidence of non fatal myocardial infarction (OR 1.05 (0.81, 1.37)), but the incidence of another marker of myocardial damage, low output syndrome, was higher in the **hypothermic** group (OR 1.21 (0.99, 1.48). When pooling all "bad" outcomes (stroke, perioperative death, myocardial infarction, low output syndrome, **intra aortic** balloon **pump** use) there was no significant advantage of either **hypothermia** or normothermia (OR 1.07 (0.92, 1.24)). Only 4 of 17 trials reported neuropsychological function as an outcome. REVIEWER'S CONCLUSIONS: This review could find no definite advantage of **hypothermia** over normothermia in the incidence of clinical events. **Hypothermia** was associated with a reduced stroke rate, but this is off set by a trend towards an increase in non stroke related perioperative mortality and myocardial damage. There is insufficient data to date to draw any conclusions about the use of mild **hypothermia** . Similarly, there is insufficient data to date to comment on the effect of temperature during CPB on subtle neurological deficits, and further trials are needed in these areas. (89 Refs.)

8/5/84 (Item 3 from file: 155)

08290242 94356481 PMID: 8076018

Hypothermic ventricular fibrillation with pulsatile coronary perfusion during repair of ventricular septal perforation following infarction.

Kitamura S; Kawachi K; Mizuguchi K; Hamada Y; Taniguchi S; Fukutomi M; Niwaya K

Cardiovascular surgery (London, England) (ENGLAND) Apr 1993, 1 (2) p149-54, ISSN 0967-2109 Journal Code: 9308765

Emergency or urgent surgery for ventricular septal perforation (VSP) following acute myocardial infarction still carries a high operative mortality rate. **Hypothermic** fibrillatory arrest studies without aortic cross-clamping and using continuous pulsatile coronary flow were performed to improve this result. Of 19 patients suffering from VSP, 12 underwent **hypothermic** (mean(s.d.) blood temperature 23.5(1.7) degrees C) ventricular fibrillation with concomitant pulsatile systemic and continuous coronary perfusion (group 1), and seven underwent deep **hypothermic** cardioplegic ischaemic arrest with systemic pulsatile perfusion alone (group 2). The two groups were comparable in terms of age, sex, location of infarction, number of coronary arteries involved, interval between infarction and surgery, and preoperative maximum enzyme levels and haemodynamics. Pulsatile flow with a mean(s.d.) pulse pressure of 48(13) mmHg was produced by an **intra - aortic** balloon **pumping** device in both groups. Operative exposure in the two groups was comparable. In group 1, mean(s.d.) cardiac output in the early postoperative period (within 3 h of

procedure) was significantly higher than in group 2 (4.2(0.9) versus 2.6(0.7)lmin-1m-2, P < 0.01). The 30-day operative mortality rate was significantly lower in group 1 (8% (80% confidence interval 1-29%)) than in group 2 (57% (80% confidence interval 28-83%)) (P < 0.05). On the basis of these results, **hypothermic** fibrillatory arrest with continuous pulsatile coronary perfusion can be recommended for myocardial protection during surgery for VSP associated with severe heart failure or cardiogenic shock.

8/5/88 (Item 1 from file: 198)
DIALOG(R)File 198:Health Devices Alerts(R)

00703721 ABS-36878 SUBFILE: ABS
PRODUCT(s): 10-847 CIRCULATORY ASSIST UNITS, VENTRICULAR
COMMON DEVICE NAME: Novacor N100 PCq Left Ventricular Assist Devices

MANUFACTURER: Edwards LifeSciences {374501}, One Way Dr, Irvine CA 92606

The authors report a pseudoaneurysm of the outflow graft in a 47-year-old patient with a wearable Novacor N100 PCq left ventricular assist device (LVAD). The patient, who had ischemic cardiomyopathy, was placed on the heart transplant waiting list and later experienced acute abdominal pain, which necessitated laparotomy for appendectomy and resection of a bleeding Meckel's diverticulum. Postoperatively, the patient's hemodynamic situation deteriorated, despite high doses of catecholamines and the implantation of an **intra - aortic** balloon **pump** . A Novacor N100 PCq LVAD was implanted on an emergency basis in the beating heart in the preperitoneal position under cardiopulmonary bypass and moderate **hypothermia** . 6 months after implantation, the patient was readmitted for diarrhea and dehydration. Physical examination revealed a pulsatile swelling that overlay the body of the sternum. Computed tomography (CT) of the chest with contrast enhancement revealed a pseudoaneurysm, which arose from the anterior aspect of the outflow graft and was in direct contact with a sternum wire. Cardiopulmonary bypass was instituted through femorofemoral cannulation. The pseudoaneurysm was approached through the right anterolateral thoracotomy in the fourth intercostal space. The LVAD was stopped with a single stroke every 20 sec, and the aneurysm was entered and the sternum wire removed. A small perforation in the LVAD was closed by direct sutures, and 3 other sternum wires in direct contact with the LVAD were removed. At each point where the wires contacted, small bleeding perforations of the LVAD were observed. All perforations were repaired by direct sutures. 2 months after resection of the pseudoaneurysm, the patient was well, and CT revealed no signs of aneurysm recurrence. The authors conclude that pseudoaneurysm formation at the outflow conduit is an unusual but life-threatening complication after implantation of a wearable LVAD.

SOURCE: Knosalla C, Weng Y, Buz S, et al. Pseudoaneurysm of the outflow graft in a patient with Novacor N100 LVAD system. "Ann Thorac Surg" 2000 May;70(5):1594-6.
PUBLICATION DATE: 0007

8/TI/1 (Item 1 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Intra-aortic balloon pump condensation prevention system.

8/TI/3 (Item 3 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

The efficiency of intermittent antegrade warm blood cardioplegia.

8/TI/4 (Item 4 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Risk factors for development of acute renal failure (ARF) requiring dialysis in patients undergoing cardiac surgery.

8/TI/10 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

The physiologic basis of warm cardioplegia.

8/TI/11 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Neurologic events after coronary bypass grafting: Further observations with warm cardioplegia.

8/TI/12 (Item 12 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Normothermic retrograde cardioplegia is effective in patients with left ventricular hypertrophy: A prospective and randomized study.

8/TI/13 (Item 13 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Acute renal failure in the patient undergoing cardiac operation: Prevalence, mortality rate, and main risk factors.

8/TI/14 (Item 14 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Prospective, Randomized Trial of Retrograde Warm Blood Cardioplegia: Myocardial Benefit and Neurologic Threat.

8/TI/19 (Item 19 from file: 5)
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WARM HEART SURGERY EXPERIENCE WITH LONG CROSS-CLAMP TIMES

8/TI/20 (Item 20 from file: 5)
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WARM HEART SURGERY AND RESULTS OF OPERATION FOR RECENT MYOCARDIAL INFARCTION

8/TI/21 (Item 21 from file: 5)
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WARM BLOOD CARDIOPLEGIA AS AN ADJUNCT TO MYOCARDIAL PRESERVATION DURING CORONARY ARTERY BYPASS GRAFTING

8/TI/22 (Item 22 from file: 5)
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RETROGRADE CONTINUOUS WARM BLOOD CARDIOPLEGIA A NEW CONCEPT IN MYOCARDIAL PROTECTION

8/TI/27 (Item 27 from file: 5)
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CARDIAC SURGERY IN THE OCTOGENARIAN

8/TI/32 (Item 2 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Coronary artery bypass grafting in a patient with brainstem ischemia

8/TI/33 (Item 3 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Does warm antegrade intermittent blood cardioplegia really protect the heart during coronary surgery?

8/TI/34 (Item 4 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Mitral valve surgery after previous CABG with functioning IMA grafts

8/TI/39 (Item 9 from file: 34)
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Title: NORMOTHERMIC RETROGRADE CARDIOPLEGIA IS EFFECTIVE INPATIENTS WITH LEFT-VENTRICULAR HYPERTROPHY - A PROSPECTIVE AND RANDOMIZED STUDY

8/TI/41 (Item 11 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: IS CONTINUOUS NORMOTHERMIC BLOOD CARDIOPLEGIA REALLY A PRACTICAL WAY OF MYOCARDIAL PRESERVATION - COMPARISON WITH INTERMITTENT COLD CRYSTALLOID CARDIOPLEGIA

8/TI/43 (Item 13 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: ACUTE LOWER-EXTREMITY ISCHEMIA AFTER CARDIAC-SURGERY

8/TI/44 (Item 1 from file: 73)
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

Mortality and morbidity in reoperation comparing to first intervention in coronary revascularization

8/TI/45 (Item 2 from file: 73)
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Alkaptonuric aortic stenosis: A case report

8/TI/49 (Item 6 from file: 73)
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Effect of warm heart surgery on perioperative management of patients undergoing urgent cardiac surgery

8/TI/50 (Item 7 from file: 73)
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Warm heart surgery

8/TI/51 (Item 8 from file: 73)
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Clinical evaluation of hyypothermic ventricular fibrillation, multi-dose blood cardioplegia, and single-dose Bretschneider cardioplegia in coronary surgery

8/TI/52 (Item 9 from file: 73)
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Efficacy of metabolic support with glucose-insulin-potassium for left ventricular pump failure after aortocoronary bypass surgery

8/TI/55 (Item 12 from file: 73)
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Laboratory and initial clinical studies of nifedipine, a calcium antagonist for improved myocardial preservation

8/TI/56 (Item 13 from file: 73)
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Current status of surgical treatment during the acute stage of postinfarctional ventricular septal rupture

8/TI/58 (Item 15 from file: 73)
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Estimation of adequate subendocardial blood flow by online computation of systolic pressure time index and diastolic pressure time index after cardiopulmonary bypass

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Multiple valve replacement: Changing status

8/TI/61 (Item 2 from file: 94)
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Left ventricular rupture following mitral valve replacement with preservation of posterior leaflet.

8/TI/63 (Item 4 from file: 94)
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Case Report: Repair of residual leakage under circulatory arrest via left thoracotomy after ventricular septal perforation.

8/TI/64 (Item 5 from file: 94)
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Myocardial Protection with Continuous Perfusion of Oxygenated Warm Blood and Potassium Chloride without Artificial Hypothermia.

8/TI/65 (Item 6 from file: 94)
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An emergent surgical case of acute massive pulmonary embolism supported by antithrombotic percutaneous cardiopulmonary support system.

8/TI/67 (Item 8 from file: 94)
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A Case Report of Total Aortic Arch Replacement for Distal Aortic Arch Aneurysm in an Octogenarian.

8/TI/70 (Item 11 from file: 94)
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Warm Heart Surgery with Retrograde Continuous Cardioplegia.

8/TI/71 (Item 12 from file: 94)
DIALOG(R)File 94:(c)2003 Japan Science and Tech Corp(JST). All rts. reserv.

Coronary revascularization with arterial graft alone by normothermic cardiopulmonary bypass and warm blood cardioplegia.

8/TI/72 (Item 13 from file: 94)
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Clinical study of continuous warm blood cardioplegia with normothermic cardiopulmonary bypass in coronary artery bypass surgery.

8/TI/73 (Item 14 from file: 94)
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Traumatic Abdominal Aortic Pseudoaneurysm. A Case Study.

8/TI/74 (Item 15 from file: 94)
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Acute aortic dissection due to cross-clamp injury during coronary artery bypass grafting. A report of successfully repaired case.

8/TI/75 (Item 16 from file: 94)
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A Case of Treating Abrupt Closure Due to Post PTCA Dissection by Emergent CABG. Reoperation, via Extracorporeal Circulatory Method Conducted with the Heart "Beating".

8/TI/78 (Item 19 from file: 94)
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A successful report of emergency CABG for severe calcified thoracic aorta. The porcelain aorta.

8/TI/79 (Item 20 from file: 94)
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Clinical evaluation of perioperative myocardial infarction as a complication of valve replacement.

8/TI/81 (Item 1 from file: 144)

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Acute lower extremity ischemia after cardiac surgery. Discussion

8/TI/82 (Item 1 from file: 155)
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[Survival of a patient with postinfarction ventricular septal defect following venoarterial bypass with centrifugal pump and reoperation for residual shunt]

8/TI/85 (Item 4 from file: 155)
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New treatment strategies for cardiogenic shock in acute MI. Management options depend on the availability of a cath lab.

8/TI/86 (Item 5 from file: 155)
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Myocardial protection by simple systemic hypothermia without aortic occlusion.

8/TI/87 (Item 6 from file: 155)
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[Artificial organs and surgery. Present status and problems. The artificial heart]

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S3        274   S1 AND S2
S4        147   RD (unique items)
S5        214   S1(S)S2
S6        202   S5 NOT PY>2001
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